

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.02.98
Test oil : ISO 4113
Combination No. : F 000 409 005
Injection pump
Pump designation : PES6P110A720RS3396
EP type number : F 000 400 004
Governor
Governor design. : RQV300...1300PA1379K
Governor no. : F 000 420 504
Cust. part No. : 0280742402

Customer-spec. information

Customer : MBB
Motor : OM366LA-EURO II
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 2.3
Test nozzle holder assembly : 1 688 901 101
Opening pressure bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10
Rack travel in mm : 21.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 14.00
Tolerance mm : ± 0.05
Del. quantity cm³/1000 strokes : 115.5
Tolerance cm³/1000 strokes : ± 1.0
Check tolerance cm³/1000S. : ± 4.0
Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 5.60

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 10.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1356
guide sleeve
travel mm : 9.16
Tolerance mm : ± 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.45
Tolerance mm : ± 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 4.01
Tolerance mm : ± 0.25

Rated speed rpm : 1720
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 115.5

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Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.90
Rated speed rpm : 1340
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1485
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 65.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : ± 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 14.00
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 13.00
Tolerance mm : + 0.05

Rated speed rpm : 780
rack travel mm : 13.25
Tolerance mm : + 0.05

Rated speed rpm : 1000
rack travel mm : 13.70
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 13.00
Tolerance mm : + 0.05

Rated speed rpm : 600
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 250
rack travel mm : 0.40
Tolerance mm : + 0.05

Pressure hPa : 500
rack travel mm : 1.70
Tolerance mm : + 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 90.0

Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 780
rack travel mm : 13.25
Tolerance mm : + 0.05
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 104.5
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000s. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000s. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : F 000 409 105

Injection pump
Pump designation : PES6P120A120RS7350
EP type number : 0 412 726 921

Governor
Governor design. : RQV400...1150PA1376K
Governor no. : F 000 420 502

Cust. part No. : 3933298

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 145.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 5.75
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 167.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 6.10

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1250

guide sleeve
travel mm : 7.10

Tolerance mm : ± 0.10

Rated speed rpm : 400

guide sleeve
travel mm : 1.50

Tolerance mm : ± 0.10

Rated speed rpm : 800

guide sleeve
travel mm : 4.50

Tolerance mm : ± 0.20

Rated speed rpm : 550

guide sleeve
travel mm : 3.30

Tolerance mm : ± 0.20

Rated speed rpm : 1500

guide sleeve
travel mm : 9.40

Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 167.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 118.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.00

Rated speed rpm : 1300

Tolerance 1/min : ± 15

Check
speed 1/min : ± 20

rack travel mm : 4.00

Rated speed rpm : 1465

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 72.0

tolerance degree : ± 6.0

Control lever difference

Grad : 46.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : $>$ 8.90

Testing:

Rated speed rpm : 420
rack travel mm : 6.10
Tolerance mm : \pm 0.20

Rated speed rpm : 420

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.00
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.60
Tolerance mm : \pm 0.20

Rated speed rpm : 1250
rack travel mm : 14.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 800

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 9.75
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 470
rack travel mm : 12.85
Tolerance mm : \pm 0.30

Pressure hPa : 250
rack travel mm : 10.85
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 325

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 335

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.00
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 80.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.75
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 420

Rack travel in mm : 6.10
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : F 000 409 106

Injection pump
Pump designation : PES6P120A120RS7416
EP type number : 0 412 726 959

Governor
Governor design. : RQV400...1250PA1378K
Governor no. : F 000 420 503

Cust. part No. : 3933297

Customer-spec. information
Customer : CUMMINS
Motor : 6BTA-A
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 6.25
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.65
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 160.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1329
guide sleeve

travel mm : 7.83
Tolerance mm : ± 0.15

Rated speed rpm : 400
guide sleeve

travel mm : 1.44
Tolerance mm : ± 0.20

Rated speed rpm : 939
guide sleeve

travel mm : 5.18
Tolerance mm : ± 0.25

Rated speed rpm : 640
guide sleeve

travel mm : 3.56

Tolerance mm : ± 0.25

Rated speed rpm : 1690

guide sleeve

travel mm : 11.50

Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure

hPa : 800

Del. quantity

cm³/1000 strokes : 160.5

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 4.0

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

CONTROL LEVER

control lever

position degree : 117.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 12.60

Rated speed rpm : 1325

Tolerance 1/min : ± 15

rack travel mm : 4.00

Rated speed rpm : 1480

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1550

LOW IDLE

control lever

position degree : 71.0

tolerance degree : ± 6.0

Control lever difference

Grad : 46.0

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 300
CRT mm min. : > 5.80

Testing:

Rated speed rpm : 420
rack travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.65
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.85
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 800

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 340
rack travel mm : 12.70
Tolerance mm : \pm 0.30

Pressure hPa : 180
rack travel mm : 10.50
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 280

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 131.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 11.60
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 14.10
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 420

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.02.98
Test oil : ISO 4113

Combination No. : 0 402 066 715

Injection pump
Pump designation : PES6P110A120RS3397
EP type number : 0 412 016 758

Governor
Governor design. : RSV500...1000P2A689
Governor no. : 0 421 833 611

Cust. part No. : 3930529

Customer spec. information
Customer : CDC
Motor : 6CT
Power KW : 166.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00
Difference °CS : 1.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 165.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 500

Rack travel in mm : 5.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 32.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 165.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 1060
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1155
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1275

rack travel mm : 4.00
Rated speed rpm : 1155
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 82.0
tolerance degree : + 4.0

Control lever difference
Grad : 17.0

tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 4.70

Rated speed rpm : 100

CRT mm min. : $>$ 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.20
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.30
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.45
Tolerance mm : \pm 0.20

Rated speed rpm : 900
rack travel mm : 13.00
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 1050
rack travel mm : 12.90
Tolerance mm : \pm 0.20

Pressure hPa : 850
rack travel mm : 12.30
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

rack travel mm : 13.00
Tolerance mm : \pm 0.20

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 32.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed

Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000s. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98
Test oil : ISO 4113

Combination No. : 0 402 076 817

Injection pump
Pump designation : PES6P120A720RS3367
EP type number : 0 412 026 788

Governor
Governor design. : RSV525...1000P2A640
: -1
Governor no. : 0 421 833 604

Cust. part No. : RE71286

Customer spec. information
Customer : DEERE
Motor : 6081HT001
Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference * CS : 2.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.20
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 179.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 525

Rack travel in mm : 5.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed
Tolerance

cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1400
Del. quantity
cm³/1000 strokes : 179.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 87.5
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 12.20
Rated speed rpm : 1065
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 525
rack travel mm : 4.60
Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 525
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.25
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 975
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Pressure hPa : 830
rack travel mm : 12.70
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 199.5
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 525
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.05.96
Test oil : ISO 4113

Combination No. : 0 402 736 864

Injection pump
Pump designation : PES6P120A120RS7349
EP type number : 0 412 726 920

Governor
Governor design. : RQV400...1150PA1169K
Governor no. : 0 421 815 435

Cust. part No. : 3928150

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power kW : 171.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 6.25
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 194.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 5.90

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 16.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1327
guide sleeve

travel mm : 7.76

Tolerance mm : ± 0.15

Rated speed rpm : 400

guide sleeve

travel mm : 1.39

Tolerance mm : ± 0.20

Rated speed rpm : 869

guide sleeve

travel mm : 4.79

Tolerance mm : ± 0.25

Rated speed rpm : 540

guide sleeve

travel mm : 3.27

Tolerance mm : ± 0.25

Rated speed rpm : 1700

guide sleeve

travel mm : 11.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever

position degree : MAX

Rated speed rpm : 1390

Rack travel in mm : 13.40

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 194.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever

position degree : 120.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.40

Rated speed rpm : 1310

Tolerance 1/min : ± 15

rack travel mm : 4.00

Rated speed rpm : 1485

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 6.0

Control Lever difference
Grad : 47.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : $>$ 9.00

Testing:

Rated speed rpm : 420
rack travel mm : 5.90
Tolerance mm : \pm 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Rated speed rpm : 1250
rack travel mm : 14.50
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 14.20
Tolerance mm : \pm 0.20

Rated speed rpm : 600
rack travel mm : 13.40
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 10.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 645
rack travel mm : 13.50
Tolerance mm : \pm 0.30

Pressure hPa : 355
rack travel mm : 11.35
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 315

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 325

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 14.50
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : 1200
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 182.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 95.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 420

Rack travel in mm : 5.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113
Combination No. : 0 402 746 617
Injection pump
Pump designation : PES6P120A720RS7423
EP type number : 0 412 726 963

Governor
Governor design. : RQV325...975PA909
: -12K
Governor no. : 0 421 815 531

Cust. part No. : 3136C5229-P10

Customer-spec. information
Customer : MACK
Motor : EN7300A
Power KW : 223.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 325

Rack travel in mm : 5.30

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000s. : + 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1030
guide sleeve
travel mm : 8.84
Tolerance mm : + 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.27
Tolerance mm : + 0.20

Rated speed rpm : 524
guide sleeve
travel mm : 3.30
Tolerance mm : + 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 2.30
Tolerance mm : + 0.25

Rated speed rpm : 1430
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 9.0

CONTROL LEVER

control lever
position degree : 106.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 11.60
Rated speed rpm : 1020
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 61.5
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 275
CRT min. : > 6.50

Testing:

Rated speed rpm : 325
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 975
Pressure hPa : -
rack travel mm : 8.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 975

Pressure hPa : 460
rack travel mm : 11.15
Tolerance mm : \pm 0.20

Pressure hPa : 235
rack travel mm : 9.25
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 275

Check
speed 1/min : > 80
Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 221.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

rack travel mm : 11.50
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 148.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.80
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 30.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 746 618

Injection pump
Pump designation : PES6P12DA720RS7423
EP type number : 0 412 726 963

Governor
Governor design. : RQV325...875PA909
: -13K
Governor no. : 0 421 815 532

Cust. part No. : 3136C5229-P6

Customer spec. information
Customer : MACK
Motor : EMN7300
Power KW : 223.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 212.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 931
guide sleeve
travel mm : 8.41
Tolerance mm : ± 0.15

Rated speed rpm : 325
guide sleeve
travel mm : 1.79
Tolerance mm : ± 0.20

Rated speed rpm : 754
guide sleeve
travel mm : 6.98
Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.05

Tolerance mm : ± 0.25

Rated speed rpm : 1350

guide sleeve
travel mm : 13.50

Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 212.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 109.5
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.35

Rated speed rpm : 920

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1075

Tolerance 1/min : ± 15

Check
speed 1/min : ± 20

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 62.5
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : > 6.50

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 12.85
Tolerance mm : \pm 0.05

Rated speed rpm : 510
rack travel mm : 14.05
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 13.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200

Rated speed rpm : 510
Pressure hPa : -
rack travel mm : 8.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 510

Pressure hPa : 785
rack travel mm : 13.30
Tolerance mm : \pm 0.20

Pressure hPa : 370
rack travel mm : 9.90
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 275

Check
speed 1/min : > 80
Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 296.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.50
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.30
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 746 619

Injection pump
Pump designation : PES6P120A720RS7423
EP type number : 0 412 726 963

Governor
Governor design. : RQV325...900PA909
: -14K
Governor no. : 0 421 815 533

Cust. part No. : 3136C5229-P4

Customer spec. information
Customer : MACK
Motor : EN740G
Power KW : 298.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 16.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 277.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 957
guide sleeve

travel mm : 8.66
Tolerance mm : ± 0.15

Rated speed rpm : 325
guide sleeve

travel mm : 1.79
Tolerance mm : ± 0.20

Rated speed rpm : 763
guide sleeve

travel mm : 7.04
Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve

travel mm : 4.05

Tolerance mm : ± 0.25

Rated speed rpm : 1350
guide sleeve

travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure

hPa : 1500

Del. quantity
cm³/1000 strokes : 277.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 115.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 15.00
Rated speed rpm : 945

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1140

Tolerance 1/min : ± 15

Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50

Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 62.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 325
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 16.00
Tolerance mm : \pm 0.05

Rated speed rpm : 625
rack travel mm : 15.60
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 13.90
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1500

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900
Pressure hPa : 980
rack travel mm : 14.40
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 10.35
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 275

Check
speed 1/min : > 80
Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 305.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.90
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 746 620

Injection pump
Pump designation : PES6P120A720RS7423
EP type number : 0 412 726 963

Governor
Governor design. : RQV325...900PA909
: -15K
Governor no. : 0 421 815 534

Cust. part No. : 3136C5229-P2

Customer-spec. information
Customer : MACK
Motor : EN7350
Power kW : 261.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 319 008

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 234.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 5.00

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 900
guide sleeve
travel mm : 8.40
Tolerance mm : ± 0.10

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 650
guide sleeve
travel mm : 5.70
Tolerance mm : ± 0.20

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : ± 0.20

Rated speed rpm : 1100
guide sleeve
travel mm : 10.50
Tolerance mm : ± 0.20

Rated speed rpm : 1350
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 234.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 13.15
Rated speed rpm : 945
Tolerance 1/min : ± 5
Check
speed 1/min : ± 10

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 63.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : $>$ 7.00

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 625
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.70
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 8.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900
Pressure hPa : 820
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 380
rack travel mm : 9.85

Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 275

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 267.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.70
Tolerance mm : \pm 0.20

Aneroid pressure

hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 155.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.70
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

Note remarks

Edition : 16.02.98
Test oil : ISO 4113

Injection pump
Pump designation : PES6P120A720RS7424
EP type number : 0 412 726 964

Cust. part No. : 313GC5228-P14

Customer-spec. information
Customer : MACK
Motor : EM7-300
Power KW : 224.0

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : \pm 0.1

Test nozzle holder assembly : 1 688 901 103

Opening pressure : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 17.0
Tolerance bar : \pm 1.0

Prestroke mm	:	3.30
Tolerance mm	:	± 0.05
Check		
tolerance mm	:	± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

```

Phasing      : 0-60-120-180-240
              : -300
Tolerance    : +- 0.50
Check
tolerance *NW : +- 0.75

```

```

Start of delivery blocking
Tolerance           : +- 0.50
Check
tolerance *NW       : +- 0.75
Barrel no.          :      1

```

Rated speed rpm : 875

Rack travel in mm : 14.10
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 312.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 600

Rack travel in mm : 4.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 939
guide sleeve

travel mm : 7.51
Tolerance mm : ± 0.15

Rated speed rpm : 340
guide sleeve

travel mm : 1.92
Tolerance mm : ± 0.20

Rated speed rpm : 726
guide sleeve

travel mm : 5.63
Tolerance mm : ± 0.25

Rated speed rpm : 510
guide sleeve

travel mm : 3.81

Tolerance mm : ± 0.25

Rated speed rpm : 1370

guide sleeve
travel mm : 13.50

Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 312.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 103.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.00

Rated speed rpm : 930

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1115

Tolerance 1/min : ± 15

Check
speed 1/min : ± 20

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1210

LOW IDLE

control lever
position degree : 65.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 275
CRT mm min. : > 6.06

Testing:

Rated speed rpm : 600
rack travel mm : 4.20
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 14.10
Tolerance mm : \pm 0.05

Rated speed rpm : 510
rack travel mm : 14.85
Tolerance mm : \pm 0.10

Rated speed rpm : 625
rack travel mm : 14.70
Tolerance mm : \pm 0.20

Rated speed rpm : 400
rack travel mm : 14.25
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200

Rated speed rpm : 510
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 510

Pressure hPa : 740
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 400
rack travel mm : 10.60
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 402.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.70
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 187.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 30.0

LOW IDLE

Rated speed rpm : 600

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 746 622

Injection pump
Pump designation : PES6P120A720RS7424
EP type number : 0 412 726 964

Governor
Governor design. : RQV325...900PA944
: -25K
Governor no. : 0 421 815 536

Cust. part No. : 3136C5228-P16

Customer-spec. information
Customer : MACK
Motor : E7-350
Power KW : 261.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 319.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 600

Rack travel in mm : 4.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 319.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 945
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 275

CRT mm min. : > 6.10

Testing:

Rated speed rpm : 600
rack travel mm : 4.20
Tolerance mm : ± 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 14.15
Tolerance mm : ± 0.05

Rated speed rpm : 625
rack travel mm : 13.60
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 12.80
Tolerance mm : ± 0.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200

Rated speed rpm : 900
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 900

Pressure hPa : 810
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 420
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 339.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.80

Tolerance mm : \pm 0.40

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 30.0

LOW IDLE

Rated speed rpm : 600

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 746 623

Injection pump
Pump designation : PES6P120A720RS7424
EP type number : 0 412 726 964

Governor
Governor design. : RQV325...875PA944
: -26k
Governor no. : 0 421 815 537

Cust. part No. : 3136C5228-P4

Customer spec. information
Customer : MACK
Motor : EM7-275
Power KW : 202.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 293.5

Tolerance	
cm ³ /1000 strokes	: + 1.0

Check tolerance	
cm ³ /1000S.	: + 4.0

Speed	
-------	--

Tolerance	
cm ³ /1000 strokes	: 5.0

Check tolerance	
cm ³ /1000S.	: 9.0

Rated speed rpm	: 340
-----------------	-------

Rack travel in mm	: 4.90
-------------------	--------

Tolerance mm	: + 0.10
--------------	----------

Del. quantity	
cm ³ /1000 strokes	: 40.0

Tolerance	
cm ³ /1000 strokes	: + 3.0

Check tolerance	
cm ³ /1000S.	: + 5.0

Speed	
-------	--

Tolerance	
cm ³ /1000 strokes	: 8.0

Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 875
-----------------	-------

Aneroid pressure	
hPa	: 1200

Del. quantity	
cm ³ /1000 strokes	: 293.5

Tolerance	
cm ³ /1000 strokes	: + 1.0

Check tolerance	
cm ³ /1000S.	: + 4.0

Speed	
-------	--

Tolerance	
cm ³ /1000 strokes	: 5.0

Check tolerance	
cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 118.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 12.40
----------------	---------

Rated speed rpm	: 920
-----------------	-------

Tolerance 1/min	: + 5
-----------------	-------

Check	
speed 1/min	: + 10

rack travel mm	: 4.00
----------------	--------

Rated speed rpm	: 1075
-----------------	--------

Tolerance 1/min	: + 15
-----------------	--------

Check	
speed 1/min	: + 20

rack travel mm	: 0.50
----------------	--------

Tolerance mm	: + 0.50
--------------	----------

Rated speed rpm	: 1200
-----------------	--------

LOW IDLE

control lever	
position degree	: 63.5
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 275
-----------------	-------

CRT mm min.	: > 6.00
-------------	----------

Testing:

Rated speed rpm	: 340
-----------------	-------

rack travel mm	: 4.90
----------------	--------

Tolerance mm	: + 0.10
--------------	----------

Rated speed rpm	: 425
-----------------	-------

TORQUE CONTROL

Rated speed rpm	: 875
-----------------	-------

rack travel mm	: 13.45
----------------	---------

Tolerance mm	: + 0.05
--------------	----------

Rated speed rpm	: 510
-----------------	-------

rack travel mm	: 14.20
----------------	---------

Tolerance mm	: + 0.10
--------------	----------

Rated speed rpm	: 600
-----------------	-------

rack travel mm	: 14.30
----------------	---------

Tolerance mm	: + 0.10
--------------	----------

Rated speed rpm : 450
rack travel mm : 13.60
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 510
Pressure hPa : -
rack travel mm : 8.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 510

Pressure hPa : 635
rack travel mm : 12.60
Tolerance mm : \pm 0.20

Pressure hPa : 310
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 381.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

rack travel mm : 14.30
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 30.0

LOW IDLE

Rated speed rpm : 340

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

Note remarks

Edition : 16.02.98
Test oil : ISO 4113

Injection pump
Pump designation : PES6P120A720RS7424
EP type number : 0 412 726 964

Cust. part No. : 313GC5228-P8

Customer : MACK
Motor : E7-300A
Power KW : 224.0

Inlet line : 3.2

```

test oil inlet
temp. °C      :      40
Tolerance °C  :  ±  2.0

```

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : \pm 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure : 208.5
Tolerance bar : \pm 1.5

Test Lines : 1 680 750 008

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 17.0
Tolerance bar : \pm 1.0

Prestroke mm	:	2.80
Tolerance mm	:	+ 0.05
Check		
tolerance mm	:	+ 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

```

Phasing      : 0-60-120-180-240
              : -300
Tolerance    : + 0.50
Check
tolerance *NW : + 0.75

```

Start of delivery blocking

Tolerance : \pm 0.50
Check
tolerance *NW : \pm 0.75

Barrel no. : 1

Rated speed rpm : 975

Rack travel in mm : 12.95
Tolerance mm : ± 0.05

Del. quantity _____
cm³/1000 strokes : 272.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 340

Rack travel in mm : 4.80

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 31.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1031
guide sleeve

travel mm : 9.10

Tolerance mm : ± 0.15

Rated speed rpm : 340

guide sleeve
travel mm : 1.75

Tolerance mm : ± 0.20

Rated speed rpm : 882

guide sleeve
travel mm : 7.75

Tolerance mm : ± 0.25

Rated speed rpm : 590

guide sleeve
travel mm : 4.25

Tolerance mm : ± 0.25

Rated speed rpm : 1350
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975

Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 272.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 112.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.90

Rated speed rpm : 1020

Tolerance 1/min : ± 5

Check
speed 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1180

Tolerance 1/min : ± 10

Check
speed 1/min : ± 20

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 65.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 240
CRT mm min. : > 6.50

Testing:

Rated speed rpm : 340
rack travel mm : 4.80
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 12.95
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.25
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.95
Tolerance mm : \pm 0.05

Rated speed rpm : 975
Pressure hPa : -
rack travel mm : 8.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 975
Pressure hPa : 640
rack travel mm : 11.80
Tolerance mm : \pm 0.20

Pressure hPa : 325
rack travel mm : 9.45
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 287.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 11.60
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 30.0

LOW IDLE

Rated speed rpm : 340

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113
Combination No. : 0 402 746 625
Injection pump
Pump designation : PES6P120A720RS7424
EP type number : 0 412 726 964

Governor
Governor design. : RQV325...875PA944
: -28K
Governor no. : 0 421 815 539

Cust. part No. : 313GC5228-P2

Customer-spec. information
Customer : MACK
Motor : EM7-250
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 269.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 340

Rack travel in mm : 4.70

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 34.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 933
guide sleeve
travel mm : 9.87
Tolerance mm : + 0.15

Rated speed rpm : 340
guide sleeve
travel mm : 2.25
Tolerance mm : + 0.20

Rated speed rpm : 706
guide sleeve
travel mm : 8.09
Tolerance mm : + 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 4.59
Tolerance mm : + 0.25

Rated speed rpm : 1260
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 269.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 11.40
Rated speed rpm : 920
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1055
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 63.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 240

CRT mm min. : > 6.34

Testing:

Rated speed rpm : 340
rack travel mm : 4.70
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 510
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 12.20
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 510
Pressure hPa : -
rack travel mm : 8.70
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 510
Pressure hPa : 570
rack travel mm : 12.20
Tolerance mm : \pm 0.20

Pressure hPa : 285
rack travel mm : 9.90
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 250

Check
speed 1/min : $>$ 80

Check
speed 1/min : $<$ 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 345.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 12.20
Tolerance mm : \pm 0.20

Aneroid pressure

hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 30.0

LOW IDLE

Rated speed rpm : 340
Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 34.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113
Combination No. : 0 402 746 626
Injection pump
Pump designation : PES6P120A720RS7424
EP type number : 0 412 726 964

Governor
Governor design. : RQV325...975PA944
: -29K
Governor no. : 0 421 815 540

Cust. part No. : 3136C5228-P6

Customer-spec. information
Customer : MACK
Motor : E7-250A
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 270.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 340

Rack travel in mm : 4.90

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 40.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 5.0

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1031

guide sleeve

travel mm : 8.91

Tolerance mm : \pm 0.15

Rated speed rpm : 340

guide sleeve

travel mm : 2.25

Tolerance mm : \pm 0.20

Rated speed rpm : 882

guide sleeve

travel mm : 7.70

Tolerance mm : \pm 0.25

Rated speed rpm : 590

guide sleeve

travel mm : 4.37

Tolerance mm : \pm 0.25

Rated speed rpm : 1430

guide sleeve

travel mm : 13.50

Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975

Aneroid pressure

hPa : 1200

Del. quantity

cm³/1000 strokes : 270.5

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 4.0

Spread

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 111.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.90

Rated speed rpm : 1020

Tolerance 1/min : \pm 5

Check

speed 1/min : \pm 10

rack travel mm : 4.00

Rated speed rpm : 1190

Tolerance 1/min : \pm 15

Check

speed 1/min : \pm 20

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 63.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 265
CRT mm min. : > 6.50

Testing:

Rated speed rpm : 340
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 12.95
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.60
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.80
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.95
Tolerance mm : \pm 0.05

Rated speed rpm : 975
Pressure hPa : -
rack travel mm : 9.05
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 975
Pressure hPa : 590
rack travel mm : 11.60
Tolerance mm : \pm 0.20

Pressure hPa : 330
rack travel mm : 9.75
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 250

CO4

Check
speed 1/min : > 80
Check
speed 1/min : < 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 303.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 11.80
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 191.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 30.0

LOW IDLE

Rated speed rpm : 340

Rack travel in mm : 4.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 776 838

Injection pump
Pump designation : PES6P120A720RS7382
EP type number : 0 412 726 943

Governor
Governor design. : RSV625...1100POA547
: -14
Governor no. : 0 421 833 545

Cust. part No. : RE67358

Customer-spec. information
Customer : DEERE
Motor : 6081 HZ001
Power KW : 214.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 9.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference * CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.45
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 625

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 21.5

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.75

C07

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 2000

Del. quantity
cm³/1000 strokes : 196.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.40
Rated speed rpm : 1175

Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1235

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1235

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 625
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 625
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.45
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 2000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.60
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 1350
rack travel mm : 12.30
Tolerance mm : \pm 0.20

Pressure hPa : 630
rack travel mm : 10.50
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 136.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 625

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.02.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 015

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1250A0C892R
Governor no. : F 002 A20 215

Cust. part No. : 3928602

Customer-spec. information

Customer : CDC
Motor : 4BTA ELITE
Power KW : 86.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 2.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 9.00
Tolerance : + 0.10
Check
tolerance °NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 113.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 475

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension

click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 113.0

C10

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 111.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 1320

Tolerance 1/min : ± 5

rack travel mm : 5.10

Rated speed rpm : 1410

Tolerance 1/min : ± 5

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1475

rack travel mm : 5.10

Rated speed rpm : 1410

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 85.0

tolerance degree : ± 4.0

Control lever difference

Grad : 26.0

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 475

rack travel mm : 5.50

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 6.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 560
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1000

Rated speed rpm : 800
Pressure hPa : -
rack travel mm : 11.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 800

Pressure hPa : 650
rack travel mm : 12.80
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 12.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 86.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98
Test oil : ISO 4113

Combination No. : F 002 ADZ 061

Injection pump
Pump designation : PES4A95D320/3RS2927
EP type number : F 002 A10 017

Governor
Governor design. : RSV475...1100A2C941R
Governor no. : F 002 A20 242

Cust. part No. : 3930143

Customer spec. information
Customer : CDC
Motor : 4BNA3.9
Power KW : 54.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 9.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.55
Tolerance mm : ± 0.05

Rated speed rpm : 515

Rack travel in mm : 5.40
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.00

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 9.50
Rated speed rpm : 1175
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1250
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 81.0
tolerance degree : + 4.0

Control lever difference
Grad : 19.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 515
rack travel mm : 4.90
Tolerance mm : + 0.20

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 515
rack travel mm : 5.40
Tolerance mm : + 0.20

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.55
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 10.55
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 515
Rack travel in mm : 5.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 063

Injection pump
Pump designation : PES4A95D320/3RS2927
EP type number : F 002 A10 017

Governor
Governor design. : RSV475...1100A2C943R
Governor no. : F 002 A20 244

Cust. part No. : 3931397

Customer spec. information

Customer : CDC
Motor : 43NA3.9
Power KW : 45.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 8.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 75.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 525

Rack travel in mm : 4.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 75.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 88.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 7.20
Rated speed rpm : 1175
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1215
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1215
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

Control lever difference
Grad : 14.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 525
rack travel mm : 4.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 525
rack travel mm : 4.60
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 8.20
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 9.20
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 69.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 525

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.5

Tolerance

cm³/1000 strokes : \pm 2.0

Check tolerance

cm³/1000S. : \pm 4.5

Speed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98

Test oil : ISO 4113

Combination No. : F 002 A0Z 064

Injection pump

Pump designation : PES4A95D320/3RS2927

EP type number : F 002 A10 017

Governor

Governor design. : RSV475...1000A2C944R

Governor no. : F 002 A20 245

Cust. part No. : 3933090

Customer spec. information

Customer : CDC

Motor : 4ENA3.9

Power KW : 40.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Tolerance bar : + 0.1

Test nozzle holder assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : + 1.0

Prestroke mm : 2.85

Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance : + 0.50

Check

tolerance *NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 6.50

Tolerance : + 0.50

Check

tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 8.05

Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 70.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 525

Rack travel in mm : 4.75
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 70.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 87.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 7.00
Rated speed rpm : 1070
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1175

rack travel mm : 4.00
Rated speed rpm : 1090
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Control lever difference
Grad : 17.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 525
rack travel mm : 4.25
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 525
rack travel mm : 4.75
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 8.05
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 9.15
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 15.0

LOW IDLE

Rated speed rpm : 525
Rack travel in mm : 4.75
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.5

C20

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.02.98
Test oil : ISO 4113
Combination No. : 0 401 816 706
Injection pump
Pump designation : PE6P120A300RS3075
EP type number : 0 411 826 719

Governor
Governor design. :
Governor no. :

Cust. part No. : 846681 P02 v.11.81

Customer spec. information
Customer : PENTA
Motor : TD120FG

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 244.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 244.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 11.90

Tolerance mm : \pm 0.10

LOW IDLE

Rated speed rpm : 650

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.02.98
Test oil : ISO 4113

Combination No. : 0 401 816 715

Injection pump
Pump designation : PE6P120A300RS3315
EP type number : 0 411 826 808

Governor
Governor design. :
Governor no. :

Cust. part No. : 866027-P04 v.10.93

Customer-spec. information
Customer : PENTA
Motor : TAB 730 G

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.90
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.90

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 243.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 3.90
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 243.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

LOW IDLE

Testing:

Rated speed rpm : 300

rack travel mm : 3.90

Tolerance mm : \pm 0.30

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 10.90

Tolerance mm : \pm 0.10

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 3.90

Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.97

Test oil : ISO 4113

Combination No. : 0 401 846 529

Injection pump

Pump designation : PE6P120A32ORS3186

EP type number : 0 411 826 756

Governor

Governor design. : RQV250...1025PA921

: -4

Governor no. : 0 421 813 787

Cust. part No. : 422719-P05 V. 06/92

Customer spec. information

Customer : VOLVO-TRUCK

Motor : TD102F (Q)

Power KW : 220.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 120

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.65

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.00

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance *NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1080

guide sleeve
travel mm : 8.40
Tolerance mm : ± 0.10

Rated speed rpm : 250

guide sleeve
travel mm : 1.25

Tolerance mm : ± 0.05

Rated speed rpm : 900
guide sleeve
travel mm : 6.50
Tolerance mm : ± 0.10

Rated speed rpm : 430
guide sleeve
travel mm : 3.65
Tolerance mm : ± 0.15

Rated speed rpm : 700
guide sleeve
travel mm : 6.50
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1080

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : ± 4.0

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.45

Rated speed rpm : 1060
 Tolerance 1/min : + 5
 rack travel mm : 4.00
 Rated speed rpm : 1135
 Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1250

LOW IDLE

control lever
 position degree : 65.0
 tolerance degree : + 4.0

control lever
 position degree : 8.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 250
 rack travel mm : 5.10
 Tolerance mm : + 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 12.45
 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1000
 rack travel mm : 12.45
 Tolerance mm : + 0.05

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 9.75

C27

Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 510
 rack travel mm : 2.35
 Tolerance mm : + 0.20

Pressure hPa : 100
 rack travel mm : 0.25
 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 700
 Del. quantity
 cm³/1000 strokes : 144.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.10
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 19.0
 Tolerance
 cm³/1000 strokes : + 2.5
 Check tolerance
 cm³/1000S. : + 5.0

Speed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98
Test oil : ISO 4113

Combination No. : 0 401 846 882

Injection pump
Pump designation : PE6P120A320RS3206-1
EP type number : 0 411 826 775

Governor
Governor design. : RQ750PA783-1
Governor no. : 0 421 801 432

Cust. part No. : 863232 P05 V. 06/96

Customer-spec. information
Customer : VOLVO-PENTA
Motor : TWD 1211 G
Power KW : 288.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBc diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0

Overflow quantity
min. L/h : 215
Tolerance L/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 345.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 757
guide sleeve
travel mm : 4.06
Tolerance mm : \pm 0.25

Rated speed rpm : 510
guide sleeve
travel mm : -8.33
Tolerance mm : \pm 0.25

Rated speed rpm : 860
guide sleeve
travel mm : 16.96
Tolerance mm : \pm 0.25

Rated speed rpm : 814

D01

guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 870
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 345.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 88.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.80
Rated speed rpm : 751
Tolerance 1/min : \pm 3

rack travel mm : 4.00
Rated speed rpm : 791
Tolerance 1/min : \pm 8

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 748
rack travel mm : 12.80

Rated speed rpm : 789
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 749
rack travel mm : 12.80

Rated speed rpm : 790
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 750
rack travel mm : 12.80

Rated speed rpm : 791
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 751
rack travel mm : 12.80

Rated speed rpm : 792
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 752
rack travel mm : 12.80

Rated speed rpm : 793
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

Rated speed rpm : 753
rack travel mm : 12.80

Rated speed rpm : 794
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.80
Tolerance mm : \pm 0.05

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.02.98
Test oil : ISO 4113

Combination No. : 0 401 876 321

Injection pump
Pump designation : PE6P110A320RS497
EP type number : 0 411 816 165

Governor
Governor design. : RSV200...1200P1A374
 : -16
Governor no. : 0 421 833 469

Cust. part No. : 848718 P09 v. 06/96

Customer-spec. information
Customer : PENTA
Motor : TD71A
Power KW : 167.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.40
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.45
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 129.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.30

D04

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 129.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever

position degree : 110.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.45

Rated speed rpm : 1215

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1265

Tolerance 1/min : \pm 15

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1410

LOW IDLE

control lever

position degree : 70.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300

rack travel mm : 4.80

Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 300

rack travel mm : 5.30

Tolerance mm : \pm 0.10
rack travel mm : 2.00
Rated speed rpm : 410
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 340
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Pressure hPa : 690
rack travel mm : 12.20
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 91.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 401 876 340

Injection pump
Pump designation : PE6P110A320RS499
EP type number : 0 411 816 169

Governor
Governor design. : RSV325...1400POA374
: -9
Governor no. : 0 421 833 335

Cust. part No. : 864433-P04 v.10.92

Customer spec. information

Customer : PENTA
Motor : TAMD 61 A
Power KW : 225.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 9.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.10
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 120.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 325

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 120.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 68.0
tolerance degree : \pm 4.0

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.10
Rated speed rpm : 1455
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1540
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1630

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

control lever
position degree : 33.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 3.70
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.10
Tolerance mm : \pm 0.05

Rated speed rpm : 1400
rack travel mm : 11.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.10
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 720
rack travel mm : 2.10
Tolerance mm : \pm 0.20

Pressure hPa : 370
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900

D08

Rated speed rpm : 1400
Del. quantity
cm³/1000 strokes : 123.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.30
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.98

Test oil : ISO 4113

Combination No. : 0 401 876 754

Injection pump

Pump designation : PE6P110B320RS3152

EP type number : 0 411 816 799

Governor

Governor design. : RSV200...1100P1A659

Governor no. : 0 421 833 577

Cust. part No. : 3826523-P01 v.08.96

Customer spec. information

Customer : VOLVO-PENTA

Motor : TD100G

Power KW : 203.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holder assembly

: 0 681 343 009

Opening pressure bar

: 173.5

D10

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.20

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 173.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 200

Rack travel in mm : 4.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread

Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.00

D11

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 173.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 112.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.70
Rated speed rpm : 1130
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

control lever
position degree : 24.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
rack travel mm : 3.80
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 200
rack travel mm : 4.30
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 285
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.70
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.70
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.20
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 275
rack travel mm : 10.50
Tolerance mm : \pm 0.20

Pressure hPa : 570
rack travel mm : 12.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

D12

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 126.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 200
Rack travel in mm : 4.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.98
Test oil : ISO 4113

Combination No. : 0 401 876 755

Injection pump
Pump designation : PE6P120B320RS3187
EP type number : 0 411 826 818

Governor
Governor design. : RSV250...1100P1A653
Governor no. : 0 421 833 571

Cust. part No. : 3826534
: -P01 v. 08.96

Customer spec. information
Customer : VOLVO-PENTA
Motor : TD121G
Power KW : 256.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.20
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 210.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 27.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 210.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : ± 4.0

control lever
position degree : 108.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.50
Rated speed rpm : 1130
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 74.0
tolerance degree : ± 4.0

control lever
position degree : 24.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 4.30
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 250
rack travel mm : 4.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 340
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.50
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.50
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.20
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 615
rack travel mm : 11.60
Tolerance mm : \pm 0.20

Pressure hPa : 740
rack travel mm : 12.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

D15

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 178.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 17.02.98

Test oil : ISO 4113

Combination No. : 0 401 876 762

Injection pump

Pump designation : PE6P120B320RS3206

EP type number : 0 411 826 820

Governor

Governor design. : RSV250...900P4A660

Governor no. : 0 421 833 578

Cust. part No. : 3826532 P01 v.10/96

Customer-spec. information

Customer : VOLVO-PENTA

Motor : TMD 122 A

Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration

damper

(RoBo diaphragm) : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 100

Tolerance l/h : ± 20.0

Test nozzle holder

assembly : 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 8.60

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.95
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 213.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 213.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : \pm 4.0

control lever
position degree : 109.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.95
Rated speed rpm : 930
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 980
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1130

rack travel mm : 4.00
Rated speed rpm : 990
Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 80.0

tolerance degree : \pm 4.0

control lever

position degree : 30.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

rack travel mm : 4.60

Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 250

rack travel mm : 5.10

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 410

Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 9.95

Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 700

Pressure hPa : 1000

rack travel mm : 9.95

Tolerance mm : \pm 0.05

Rated speed rpm : 700

Pressure hPa : -

rack travel mm : 8.60

Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 700

Pressure hPa : 600

rack travel mm : 0.90

Tolerance mm : \pm 0.15

Pressure hPa : 460

rack travel mm : 0.25

Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 700

Del. quantity

cm³/1000 strokes : 178.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 8.60

Tolerance mm : \pm 0.50

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.10

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 20.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Speed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 401 876 769

Injection pump
Pump designation : PE6P120A320RS3206-2
EP type number : 0 411 826 784

Governor
Governor design. : RSV250...1300POA374
: -8
Governor no. : 0 421 833 320

Cust. part No. : 864068 P05 v. 04/95

Customer spec. information
Customer : PENTA
Motor : TAM071 B
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.20
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 10.10
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 216.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

D20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 216.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 64.0
tolerance degree : + 4.0

control lever
position degree : 114.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.10
Rated speed rpm : 1340
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1430
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1530

rack travel mm : 4.00
Rated speed rpm : 1440
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 80.0

tolerance degree : \pm 4.0

control lever

position degree : 30.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

rack travel mm : 4.70

Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 250

rack travel mm : 5.20

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 440

Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1000

rack travel mm : 10.10

Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1200

rack travel mm : 10.10

Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 7.20

Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 780

rack travel mm : 2.60

Tolerance mm : \pm 0.20

Pressure hPa : 350

rack travel mm : 0.25

Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 700

Del. quantity

cm³/1000 strokes : 136.5

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.20

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 20.0

Tolerance

cm³/1000 strokes : \pm 2.5

Check tolerance

cm³/1000S. : \pm 5.0

Speed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.02.98
Test oil : ISO 4113

Combination No. : 0 401 876 777

Injection pump
Pump designation : PE6P120B320RS3261
EP type number : 0 411 826 821

Governor
Governor design. : RSV250...1100POA655
Governor no. : 0 421 833 573

Cust. part No. : 3826513 P02 v.11.97

Customer-spec. information
Customer : PENTA
Motor : TAMD 102 A
Power KW : 294.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration
damper
(RoBo diaphragm) : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 8.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 260.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 6.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

**(B) SETTING OF INJECTION PUMP
WITH GOVERNOR**

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure

hPa : 1500

Del. quantity
cm³/1000 strokes : 260.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 47.0
tolerance degree : + 4.0

control lever
position degree : 97.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.10
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1210
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 73.0

tolerance degree : \pm 4.0

control lever

position degree : 23.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

rack travel mm : 6.00

Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 250

rack travel mm : 6.50

Tolerance mm : \pm 0.10

rack travel mm : 2.00

Rated speed rpm : 400

Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 12.15

Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1500

rack travel mm : 12.15

Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 8.50

Tolerance mm : \pm 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 900

rack travel mm : 3.20

Tolerance mm : \pm 0.15

Pressure hPa : 140

rack travel mm : 0.25

Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 700

Del. quantity

cm³/1000 strokes : 150.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 17.00

Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 6.50

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 23.0

Tolerance

cm³/1000 strokes : \pm 3.0

Check tolerance

cm³/1000S. : \pm 6.0

Speed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113
Combination No. : 0 401 876 784

Injection pump
Pump designation : PE6P120A32ORS3189
EP type number : 0 411 826 759

Governor
Governor design. : RSV650...750P4A421
: -14
Governor no. : 0 421 833 467

Cust. part No. : 864537 P09 v.05/96

Customer-spec. information
Customer : PENTA
Motor : TWD 710 G
Power KW : 154.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 100
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 190.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 650

Rack travel in mm : 3.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 40.0
tolerance degree : + 4.0

control lever
position degree : 90.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 8.30
Rated speed rpm : 752
Tolerance 1/min : + 3

rack travel mm : 4.00
Rated speed rpm : 778
Tolerance 1/min : + 7

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 8.30

Rated speed rpm : 776
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 751
rack travel mm : 8.30

Rated speed rpm : 777
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 752
rack travel mm : 8.30

Rated speed rpm : 778
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 753
rack travel mm : 8.30

Rated speed rpm : 779
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 754
rack travel mm : 8.30

Rated speed rpm : 780
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

Rated speed rpm : 755
rack travel mm : 8.30

Rated speed rpm : 781
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 900

LOW IDLE

control lever
position degree : 84.0
tolerance degree : + 4.0

control lever
position degree : 34.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 650
rack travel mm : 3.20
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 660
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 9.30
Tolerance mm : + 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50

LOW IDLE

Rated speed rpm : 650

Rack travel in mm : 3.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 401 876 794

Injection pump
Pump designation : PE6P120A320RS3206-3
EP type number : 0 411 826 809

Governor
Governor design. : RSV250...1100P1A560
: -2
Governor no. : 0 421 833 471

Cust. part No. : 865560-P08 v. 09/97

Customer spec. information
Customer : PENTA
Motor : TAD 730 P
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 260
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 197.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

EO2

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 197.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.45
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 82.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 330
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 9.45
Tolerance mm : ± 0.05

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98
Test oil : ISO 4113

Combination No. : 0 401 876 801

Injection pump
Pump designation : PE6P120A32ORS3375
EP type number : 0 411 826 817

Governor
Governor design. : RSV250...900P0A646
Governor no. : 0 421 833 562

Cust. part No. : 3826154 P02 v.06.96

Customer spec. information
Customer : PENTA
Motor : TWD 710P
Power KW : 168.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 260
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 8.20
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 8.15
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 155.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 250

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 155.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 37.0
tolerance degree : \pm 4.0

control lever
position degree : 87.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 7.15
Rated speed rpm : 920
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 955
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1050

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

control lever
position degree : 21.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 250
rack travel mm : 5.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 345
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 8.15
Tolerance mm : \pm 0.05

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.02.98

Test oil : ISO 4113

Combination No. : 0 401 876 802

Injection pump

Pump designation : PE6P120A320RS3206-1

EP type number : 0 411 826 775

Governor

Governor design. : RSV250...900P4A550

: -1

Governor no. : 0 421 833 427

Cust. part No. : 866383-P06 V. 06.96

Customer spec. information

Customer : PENTA

Motor : TWD1210P

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 160

Tolerance l/h : ± 20.0

Test nozzle holder assembly

: 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.50

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 11.30

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : \pm 4.0

control lever
position degree : 111.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.35
Rated speed rpm : 930
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 970
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

control lever
position degree : 30.0

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 370
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.35
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 292.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 401 876 803

Injection pump
Pump designation : PE6P110A32ORS3266
EP type number : 0 411 816 777

Governor
Governor design. : RSV350...1250POA578
Governor no. : 0 421 833 434

Cust. part No. : 866200-P06 v.10/97

Customer spec. information
Customer : PENTA
Motor : TWD 630VE
Power KW : 140.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 9.40
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.00
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 350

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

RATED SPEED

rack travel mm : 11.00

Rated speed rpm : 1280

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1400

rack travel mm : 4.00

Rated speed rpm : 1345

Tolerance 1/min : \pm 15

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350

rack travel mm : 5.00

Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 350

rack travel mm : 5.50

Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 12.00

Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 710
rack travel mm : 2.30
Tolerance mm : \pm 0.20

Pressure hPa : 240
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.98
Test oil : ISO 4113

Combination No. : 0 401 876 804

Injection pump
Pump designation : PE6P120A320RS3339
EP type number : 0 411 826 812

Governor
Governor design. : RSV325...1400POA590
Governor no. : 0 421 833 450

Cust. part No. : 3825199-PO6 v. 9/95

Customer-spec. information
Customer : PENTA
Motor : TAM63 L
Power KW : 228.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 6.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 8.90
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	:	141.0
Tolerance cm ³ /1000 strokes	:	+ 1.0
Check tolerance cm ³ /1000S.	:	+ 4.0
Spreed		
Tolerance cm ³ /1000 strokes	:	5.0
Check tolerance cm ³ /1000S.	:	9.0

Rated speed rpm	:	325
Rack travel in mm	:	3.80
Tolerance mm	:	+ 0.10
Del. quantity cm ³ /1000 strokes	:	23.0
Tolerance cm ³ /1000 strokes	:	+ 3.0
Check tolerance cm ³ /1000S.	:	+ 6.0
Spreed		
Tolerance cm ³ /1000 strokes	:	5.0
Check tolerance cm ³ /1000S.	:	8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	:	- 3
Rated speed rpm	:	800
Rack travel in mm	:	0.55
Tolerance mm	:	+ 0.25
governor spring pre-tension click setting x	:	5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1000
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Aneroid pressure hPa	:	2000
Del. quantity cm ³ /1000 strokes	:	141.0
Tolerance cm ³ /1000 strokes	:	+ 1.0
Check tolerance cm ³ /1000S.	:	+ 4.0
Spreed		
Tolerance cm ³ /1000 strokes	:	5.0
Check tolerance cm ³ /1000S.	:	9.0

CONTROL LEVER

control lever position degree	:	68.0
tolerance degree	:	+ 4.0
control lever position degree	:	118.0
tolerance degree	:	+ 4.0

RATED SPEED

rack travel mm	:	7.90
Rated speed rpm	:	1470
Tolerance 1/min	:	+ 5
rack travel mm	:	4.00
Rated speed rpm	:	1530
Tolerance 1/min	:	+ 15
rack travel mm	:	0.85
Tolerance mm	:	+ 0.55
Rated speed rpm	:	1630

LOW IDLE

control lever position degree	:	82.0
tolerance degree	:	+ 4.0
control lever position degree	:	32.0
tolerance degree	:	+ 4.0

Setting point w/out bumper spring

Rated speed rpm	:	325
rack travel mm	:	3.30
Tolerance mm	:	+ 0.20

Testing:

Rated speed rpm : 325
rack travel mm : 3.80
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 460
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 8.90
Tolerance mm : + 0.05

Rated speed rpm : 1400
rack travel mm : 8.90
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 2000
rack travel mm : 8.90
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 6.50
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 850
rack travel mm : 2.00
Tolerance mm : + 0.15

Pressure hPa : 490
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1400
Del. quantity
cm³/1000 strokes : 128.0
Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.00
Tolerance mm : + 0.25

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 3.80
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.98
Test oil : ISO 4113

Combination No. : 0 401 876 809

Injection pump
Pump designation : PE6P120A320RS3355
EP type number : 0 411 826 814

Governor
Governor design. : RSV325...1200P1A605
Governor no. : 0 421 833 487

Cust. part No. : 3825834 P05 v.05/96

Customer-spec. information
Customer : PENTA
Motor : TWD 731 E
Power KW : 175.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.80
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.60
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 126.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 11.0

Rated speed rpm	: 325
Rack travel in mm	: 4.40
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 24.0
Tolerance cm ³ /1000 strokes	: ± 2.5
Check tolerance cm ³ /1000S.	: ± 5.0
Spreed	
Tolerance cm ³ /1000 strokes	: 3.0
Check tolerance cm ³ /1000S.	: 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.85
Tolerance mm	: ± 0.55
governor spring pre-tension click setting x	: 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1200
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Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 126.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 7.0
Check tolerance cm ³ /1000S.	: 11.0

CONTROL LEVER

control lever position degree	: 71.0
tolerance degree	: ± 4.0
control lever position degree	: 121.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 9.60
Rated speed rpm	: 1230
Tolerance 1/min	: ± 5
rack travel mm	: 4.00
Rated speed rpm	: 1284
Tolerance 1/min	: ± 15
rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1400

LOW IDLE

control lever position degree	: 81.0
tolerance degree	: ± 4.0
control lever position degree	: 31.0
tolerance degree	: ± 4.0

Setting point w/out bumper spring

Rated speed rpm	: 325
rack travel mm	: 3.90
Tolerance mm	: ± 0.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 10.60
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 10.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 10.60
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.80
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 780
rack travel mm : 2.50
Tolerance mm : \pm 0.15

Pressure hPa : 260
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 24.0
Tolerance

cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113
Combination No. : 0 402 076 795
Injection pump
Pump designation : PES6P120A720RS3369
EP type number : 0 412 026 789
Governor
Governor design. : RSV450...1075P5A631
Governor no. : 0 421 833 538

Cust. part No. :

Customer spec. information
Customer : IVECO-FIAT
Motor : 8365.26.584
Power KW : 144.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 10.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 136.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 5.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1075
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 9.60
Rated speed rpm : 1150
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : + 15
Check
speed 1/min : + 20

LOW IDLE

control lever
position degree : 88.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.40
Tolerance mm : + 0.10

Testing:

Rated speed rpm : 450
rack travel mm : 5.90
Tolerance mm : + 0.10
rack travel mm : 2.00
Rated speed rpm : 650
Tolerance 1/min : + 50

TORQUE CONTROL

Rated speed rpm : 1075
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 10.80
Tolerance mm : \pm 0.10

Rated speed rpm : 320
rack travel mm : 11.30
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 10.75
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 515
rack travel mm : 10.35
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 137.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

rack travel mm : 11.30
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.60
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.02.98
Test oil : ISO 4113

Combination No. : 0 402 616 803

Injection pump
Pump designation : PE6P130A300RS7274
EP type number : 0 412 636 824

Governor
Governor design. :
Governor no. :

Cust. part No. : 866146-P03 v. 10.94

Customer-spec. information
Customer : PENTA
Motor : TAD1230G(GENSET)

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(Robo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.90
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.90

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 400.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 4.00
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 400.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Testing:

Rated speed rpm : 300

rack travel mm : 4.00

Tolerance mm : \pm 0.30

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 12.90

Tolerance mm : \pm 0.10

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.00

Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 616 804

Injection pump
Pump designation : PE6P120A300RS7289
EP type number : 0 412 626 883

Governor
Governor design. :
Governor no. :

Cust. part No. : 866145-P04 v. 11/96

Customer-spec. information
Customer : PENTA
Motor : TAD 1030 G
Power KW : 229.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 361.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 8.00
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 361.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

LOW IDLE

Testing:

Rated speed rpm : 300
rack travel mm : 8.00
Tolerance mm : ± 0.20

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.50
Tolerance mm : ± 0.05

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 8.00
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 646 632

Injection pump
Pump designation : PE6P120A320R37233
: -11
EP type number : 0 412 626 919

Governor
Governor design. : RQV300...1300PA1094K
Governor no. : 0 421 815 364

Cust. part No. : 866560 P03 v. 4/95

Customer spec. information
Customer : PENTA
Motor : TAMD 72 A
Power KW : 316.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.60
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 250.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 11.0

Rated speed rpm : 300

Rack travel in mm : 5.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000s. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1345
guide sleeve
travel mm : 10.25
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.65

Tolerance mm : ± 0.25

Rated speed rpm : 899
guide sleeve
travel mm : 6.99
Tolerance mm : ± 0.25

Rated speed rpm : 387
guide sleeve
travel mm : 2.54
Tolerance mm : ± 0.25

Rated speed rpm : 437
guide sleeve
travel mm : 3.05
Tolerance mm : ± 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 4.12
Tolerance mm : ± 0.25

Rated speed rpm : 1640
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1500

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 2400

Del. quantity
cm³/1000 strokes : 250.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000s. : 11.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.80
Rated speed rpm : 1340
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1495
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 6.70

Testing:

Rated speed rpm : 300
rack travel mm : 5.90
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 12.70
Tolerance mm : \pm 0.20

Rated speed rpm : 1200
rack travel mm : 13.70
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1300
Pressure hPa : 2400
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1300
Pressure hPa : -
rack travel mm : 7.60
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1300

Pressure hPa : 1580
rack travel mm : 5.90
Tolerance mm : \pm 0.20

Pressure hPa : 370
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2400
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000s. : 14.0

Aneroid pressure
hPa : 2400

Rated speed rpm : 1000
rack travel mm : 12.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 124.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.90
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 18.12.97

Test oil : ISO 4113

Combination No. : 0 402 646 644

Injection pump

Pump designation : PE6P120A32CRS7319

EP type number : 0 412 626 914

Governor

Governor design. : RQV300...1400PA1124

Governor no. : 0 421 814 086

Cust. part No. : 866633 P04 08.96

Customer spec. information

Customer : PENTA

Motor : TAMD 63 P

Power KW : 265.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 105

Opening pressure
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

F02

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.65

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.90

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 241.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 5.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1456
guide sleeve
travel mm : 7.69
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.24
Tolerance mm : ± 0.25

Rated speed rpm : 1170
guide sleeve
travel mm : 5.67
Tolerance mm : ± 0.25

Rated speed rpm : 448
guide sleeve
travel mm : 2.83

F03

Tolerance mm : ± 0.25

Rated speed rpm : 498
guide sleeve
travel mm : 3.20
Tolerance mm : ± 0.25

Rated speed rpm : 690
guide sleeve
travel mm : 3.68
Tolerance mm : ± 0.25

Rated speed rpm : 1638
guide sleeve
travel mm : 10.00
Tolerance mm : ± 0.25

Rated speed rpm : 1760
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1640

Rack travel in mm : 9.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 2000
Del. quantity
cm³/1000 strokes : 241.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : ± 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 1455
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1585
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1650

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

control lever
position degree : 17.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 6.80

Testing:

Rated speed rpm : 300
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 1400
rack travel mm : 12.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 2000
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.20
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 1300
rack travel mm : 4.20
Tolerance mm : \pm 0.20

Pressure hPa : 430
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1400
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 84.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.02.98
Test oil : ISO 4113

Combination No. : 0 402 646 657

Injection pump
Pump designation : PE6P130A320RS7368
EP type number : 0 412 636 836

Governor
Governor design. : RQV250...1125PA1210K
Governor no. : 0 421 815 460

Cust. part No. : 866737-P05 v. 06.96

Customer spec. information
Customer : PENTA
Motor : TAMD 122 P
Power kW : 426.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Vibration
damper
(RcBo diaphragm) : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5

F06

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1125

Rack travel in mm : 11.40
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 313.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 9.0

Check tolerance
cm³/1000S. : 13.0

Rated speed rpm : 260

Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176
guide sleeve
travel mm : 10.15
Tolerance mm : \pm 0.25

Rated speed rpm : 260
guide sleeve
travel mm : 1.69
Tolerance mm : \pm 0.25

Rated speed rpm : 782

guide sleeve
travel mm : 6.36
Tolerance mm : \pm 0.25

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.25

Rated speed rpm : 325
guide sleeve
travel mm : 2.73
Tolerance mm : \pm 0.25

Rated speed rpm : 430
guide sleeve
travel mm : 3.61
Tolerance mm : \pm 0.25

Rated speed rpm : 1420
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1284

Rack travel in mm : 10.50
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1125
Aneroid pressure
hPa : 2000
Del. quantity
cm³/1000 strokes : 313.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0
Spread
Tolerance
cm³/1000 strokes : 9.0
Check tolerance
cm³/1000S. : 13.0

CONTROL LEVER

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 118.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.40
Rated speed rpm : 1165
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1245
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : + 4.0

control lever
position degree : 18.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 5.90

Testing:

Rated speed rpm : 260
rack travel mm : 4.70
Tolerance mm : + 0.10

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 1125
rack travel mm : 11.40
Tolerance mm : + 0.05

Rated speed rpm : 700
rack travel mm : 10.30
Tolerance mm : + 0.20

Rated speed rpm : 500
rack travel mm : 9.50
Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1125
Pressure hPa : 2000
rack travel mm : 11.40
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.00
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 1125

Pressure hPa : 1200
rack travel mm : 3.90
Tolerance mm : + 0.20

Pressure hPa : 150
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 301.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 500
rack travel mm : 9.50
Tolerance mm : + 0.15
Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000S. : + 5.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 7.00
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 20.0

LOW IDLE

Rated speed rpm : 260
Rack travel in mm : 4.70
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98
Test oil : ISO 4113

Combination No. : 0 402 646 850

Injection pump
Pump designation : PE6P130A720RS7140
EP type number : 0 412 636 830

Governor
Governor design. : RQV250...900PA869
Governor no. : 0 421 813 634

Cust. part No. : 849441 P0?

Customer spec. information
Customer : PENTA
Motor : TID 162 AP
Power KW : 357.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 80
Tolerance l/h : + 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.30
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.30
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 293.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 250

Rack travel in mm : 3.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance

cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 925
guide sleeve
travel mm : 7.40
Tolerance mm : ± 0.10

Rated speed rpm : 250
guide sleeve
travel mm : 1.10
Tolerance mm : ± 0.20

Rated speed rpm : 350
guide sleeve
travel mm : 2.30
Tolerance mm : ± 0.30

Rated speed rpm : 700

guide sleeve
travel mm : 4.70
Tolerance mm : ± 0.30

Rated speed rpm : 985
guide sleeve
travel mm : 8.30
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 980

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 293.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance

cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : ± 4.0

control lever
position degree : 115.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 9.30
Rated speed rpm : 925
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 985
Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

control lever
position degree : 10.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 5.30

Testing:

Rated speed rpm : 250
rack travel mm : 3.80
Tolerance mm : \pm 0.10

Rated speed rpm : 305

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 10.30
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.30
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 20.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10

F12

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.98
Test oil : ISO 4113

Combination No. : 0 402 646 967

Injection pump
Pump designation : PE6P130A720RS7150
: -10
EP type number : 0 412 636 831

Governor
Governor design. : RQV250...900PA881-1
Governor no. : 0 421 813 982

Cust. part No. : 864988-P05 v.09.97

Customer-spec. information
Customer : PENTA
Motor : TAMD 162 C,AX
Power KW : 375.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5

Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5

F13

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 9.40
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 336.0

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 250

Rack travel in mm : 4.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.5

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 925
guide sleeve
travel mm : 7.70
Tolerance mm : ± 0.10

Rated speed rpm : 250
guide sleeve
travel mm : 1.10

Tolerance mm : ± 0.20

Rated speed rpm : 350
guide sleeve
travel mm : 2.30
Tolerance mm : ± 0.30

Rated speed rpm : 700
guide sleeve
travel mm : 4.80
Tolerance mm : ± 0.30

Rated speed rpm : 985
guide sleeve
travel mm : 8.60
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 980

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 336.0

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.60
Rated speed rpm : 930
Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1000
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 150
CRT mm min. : > 6.00

Testing:

Rated speed rpm : 250
rack travel mm : 4.20
Tolerance mm : + 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.60
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 11.60
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 9.80

F15

Tolerance mm : + 0.20

Pressure hPa : 680
rack travel mm : 11.30
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : + 1.5
Check tolerance
cm³/1000s. : + 5.0

LOW IDLE

Rated speed rpm : 250

Rack travel in mm : 4.20
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 19.5
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000s. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.02.98

Test oil : ISO 4113

Combination No. : 0 402 666 803

Injection pump

Pump designation : PE6P120A320/3LS7883

EP type number : 0 412 626 938

Governor

Governor design. : RSV600...1050POA592

Governor no. : 0 421 833 458

Cust. part No. : 0220743802

Customer spec. information

Customer : MB-NFZ

Motor : OM 401 LA

Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 120

Tolerance l/h : ± 20.0

Test nozzle holde
assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 6- 3- 5- 2- 4-
: 1

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.30

Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 232.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 9.0

Rated speed rpm	: 600
Rack travel in mm	: 3.80
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 13.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 1.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1030
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Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 232.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spreed	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 88.0
tolerance degree	: ± 4.0

LOW IDLE

control lever position degree	: 74.0
tolerance degree	: ± 4.0

Setting point w/out bumper spring

Rated speed rpm	: 100
CRT mm min.	: > 19.50

Testing:

Rated speed rpm	: 600
rack travel mm	: 3.80
Tolerance mm	: ± 0.10
rack travel mm	: 2.00
Rated speed rpm	: 630
Tolerance 1/min	: ± 30

SET IDLE AUXILIARY SPRING

rack travel mm	: 2.00
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TORQUE CONTROL

Rated speed rpm	: 1030
rack travel mm	: 13.30
Tolerance mm	: ± 0.05

Rated speed rpm	: 700
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rack travel mm : 13.30
Tolerance mm : \pm 0.10

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 234.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 600

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.97
Test oil : ISO 4113

Combination No. : 0 402 846 061

Injection pump
Pump designation : PE6P120A320RS8024-1
EP type number : 0 412 826 029

Governor
Governor design. : RQV250...1100PA1072
: -3K
Governor no. : 0 421 815 979

Cust. part No. : 477950-P05 v. 11.95

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD74 EU
Power kW : 169.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 089

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.20
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 175.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.40
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176
guide sleeve
travel mm : 10.15
Tolerance mm : + 0.25

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : + 0.25

Rated speed rpm : 733
guide sleeve
travel mm : 5.39
Tolerance mm : + 0.25

Rated speed rpm : 307
guide sleeve
travel mm : 2.29
Tolerance mm : + 0.25

Rated speed rpm : 357

guide sleeve
travel mm : 2.97
Tolerance mm : + 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 3.22
Tolerance mm : + 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1290

Rack travel in mm : 7.50
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 72.0
tolerance degree : + 4.0

control lever
position degree : 118.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.40
Rated speed rpm : 1135
Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1210
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1320

LOW IDLE

control lever
 position degree : 65.0
 tolerance degree : + 4.0

control lever
 position degree : 19.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
 CRT mm min. : > 6.50

Testing:

Rated speed rpm : 300
 rack travel mm : 4.40
 Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
 rack travel mm : 11.40
 Tolerance mm : + 0.05

Rated speed rpm : 650
 rack travel mm : 9.10
 Tolerance mm : + 0.10

Rated speed rpm : 300
 rack travel mm : 8.30
 Tolerance mm : + 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
 Pressure hPa : 1500
 rack travel mm : 11.40

F21

Tolerance mm : + 0.10

Rated speed rpm : 1100
 Pressure hPa : -
 rack travel mm : 7.20
 Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 580
 rack travel mm : 3.50
 Tolerance mm : + 0.20

Pressure hPa : 120
 rack travel mm : 0.25
 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 650
 Del. quantity
 cm³/1000 strokes : 159.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 5.0
 Spread
 Tolerance
 cm³/1000 strokes : 10.0
 Check tolerance
 cm³/1000S. : 14.0

rack travel mm : 8.30
 Tolerance mm : + 0.30

Aneroid pressure
 hPa : -
 Rated speed rpm : 650
 Del. quantity
 cm³/1000 strokes : 114.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.97
Test oil : ISO 4113

Combination No. : 0 402 846 062

Injection pump
Pump designation : PE6P120A320RS3024-1
EP type number : 0 412 826 029

Governor
Governor design. : RQV250...1100PA1072
: -/K
Governor no. : 0 421 815 978

Cust. part No. : 477951-P05 v. 11.95

Customer spec. information
Customer : VOLVO-TRUCK
Motor : TD74 EU
Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 089

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.60
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 189.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176
guide sleeve
travel mm : 10.15
Tolerance mm : + 0.25

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : + 0.25

Rated speed rpm : 733
guide sleeve
travel mm : 5.39
Tolerance mm : + 0.25

Rated speed rpm : 307
guide sleeve
travel mm : 2.29
Tolerance mm : + 0.25

Rated speed rpm : 357

guide sleeve
travel mm : 2.97
Tolerance mm : + 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 3.22
Tolerance mm : + 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1290

Rack travel in mm : 7.50
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 66.0
tolerance degree : + 4.0

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 11.50
Rated speed rpm : 1135
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

control lever
position degree : 19.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 6.70

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.50
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 10.50
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 12.50

F25

Tolerance mm : \pm 0.10

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 7.75
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1100
Pressure hPa : 750
rack travel mm : 4.20
Tolerance mm : \pm 0.20

Pressure hPa : 200
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 225.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

rack travel mm : 10.50
Tolerance mm : \pm 0.30

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 3.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.98

Test oil : ISO 4113

Combination No. : 0 402 846 064

Injection pump

Pump designation : PE6P120A320RS8030

EP type number : 0 412 826 030

Governor

Governor design. : RQV300...1100PA1017

: -2

Governor no. : 0 421 814 102

Cust. part No. : 3825157-P04 v.05.96

Customer-spec. information

Customer : PENTA

Motor : TWD 1230 E

Power kW : 275.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 150

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

F27

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.15

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 8.10

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 2.5

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1182
guide sleeve
travel mm : 8.71
Tolerance mm : \pm 0.25

Rated speed rpm : 325
guide sleeve
travel mm : 1.41
Tolerance mm : \pm 0.25

Rated speed rpm : 834
guide sleeve
travel mm : 5.40
Tolerance mm : \pm 0.25

Rated speed rpm : 385
guide sleeve
travel mm : 1.98
Tolerance mm : \pm 0.25

Rated speed rpm : 435
guide sleeve
travel mm : 2.45
Tolerance mm : \pm 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 3.11
Tolerance mm : \pm 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1250

Rack travel in mm : 9.00
Tolerance mm : \pm 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1800
Del. quantity
cm³/1000 strokes : 277.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 46.0
tolerance degree : \pm 4.0

control lever
position degree : 112.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.90

Rated speed rpm : 1080

Tolerance 1/min : + 5

rack travel mm : 4.00

Rated speed rpm : 1190

Tolerance 1/min : + 15

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 82.0

tolerance degree : + 4.0

control lever

position degree : 12.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 7.20

Testing:

Rated speed rpm : 325

rack travel mm : 4.60

Tolerance mm : + 0.10

Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 11.90

Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

Pressure hPa : 1800

rack travel mm : 11.90

Tolerance mm : + 0.05

601

Rated speed rpm : 500

Pressure hPa : -

rack travel mm : 8.10

Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 1080

rack travel mm : 3.50

Tolerance mm : + 0.20

Pressure hPa : 350

rack travel mm : 0.25

Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -

Rated speed rpm : 700

Del. quantity

cm³/1000 strokes : 165.0

Tolerance

cm³/1000 strokes : + 1.0

Check tolerance

cm³/1000s. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 8.10

Tolerance mm : + 0.20

Del. quantity

cm³/1000 strokes : 120.0

Tolerance

cm³/1000 strokes : + 21.0

Check tolerance

cm³/1000s. : + 25.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 4.60

Tolerance mm : + 0.10

Del. quantity

cm³/1000 strokes : 20.0

Tolerance

cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.93
Test oil : ISO 4113
Combination No. : 0 403 446 313
Injection pump
Pump designation : PES6MW100/720RS1223
EP type number : 0 413 406 218
Governor
Governor design. : RQV325...1350MW127K
Governor no. : 0 420 083 988

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8060.45.6200
Power KW : 167.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.15
Tolerance mm : ± 0.05

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1400

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 124.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 12.00
Rated speed rpm : 1425
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1530
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 7.50

Testing:

Rated speed rpm : 325
rack travel mm : 6.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.15
Tolerance mm : \pm 0.05

Rated speed rpm : 1200
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 12.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1350
rack travel mm : 13.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1200
Pressure hPa : 1200
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1200
Pressure hPa : -
rack travel mm : 8.40
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 1200
Pressure hPa : 800
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Pressure hPa : 450
rack travel mm : 10.05
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000s. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 900
rack travel mm : 12.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 117.5
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 1350
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 66.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

WARM-START DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

COLD-START DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 10.0

Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Rack travel in mm : 6.00
Tolerance mm : ± 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.02.98
Test oil : ISO 4113
Combination No. : 0 403 466 173
Injection pump
Pump designation : PES6MM100/120RS1241
EP type number : 0 413 406 240
Governor
Governor design. : RSV400...950MWA384
: -1
Governor no. : 0 420 085 285
Cust. part No. : 3930118

Customer spec. information
Customer : CDC
Motor : 6 CT
Power kW : 145.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery blocking
°NW after s.o.d. : 7.50
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950
Rack travel in mm : 12.50
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 147.0

Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Speed	
Tolerance	
cm ³ /1000 strokes	: 4.0
Check tolerance	
cm ³ /1000S.	: 7.5

Rated speed rpm : 425

Rack travel in mm	: 5.60
Tolerance mm	: + 0.30
Del. quantity	
cm ³ /1000 strokes	: 22.0
Tolerance	
cm ³ /1000 strokes	: + 2.0
Check tolerance	
cm ³ /1000S.	: + 4.5
Speed	
Tolerance	
cm ³ /1000 strokes	: 3.5
Check tolerance	
cm ³ /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.65
Tolerance mm	: + 0.35
governor spring	
pre-tension	
click setting x	: 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 950
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm ³ /1000 strokes	: 147.0

G07

Tolerance	
cm ³ /1000 strokes	: + 1.0
Check tolerance	
cm ³ /1000S.	: + 4.0
Speed	
Tolerance	
cm ³ /1000 strokes	: 4.0
Check tolerance	
cm ³ /1000S.	: 7.5

CONTROL LEVER

control lever	
position degree	: 82.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 11.50
Rated speed rpm	: 995
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1080
Tolerance 1/min	: + 15

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1250

rack travel mm	: 4.00
Rated speed rpm	: 1095
Tolerance 1/min	: + 15

LOW IDLE

control lever	
position degree	: 68.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 425
rack travel mm	: 4.60
Tolerance mm	: + 0.10

Rated speed rpm	: 100
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CRT mm min.	: > 19.50
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Testing:

Rated speed rpm	: 425
rack travel mm	: 5.60
Tolerance mm	: + 0.30

rack travel mm : 2.00
Rated speed rpm : 505
Tolerance 1/min : + 35

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 12.50
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.50
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.25
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 850
rack travel mm : 11.60
Tolerance mm : + 0.20

Pressure hPa : 680
rack travel mm : 10.75
Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 13.0

LOW IDLE

Rated speed rpm : 425

Rack travel in mm : 5.60
Tolerance mm : + 0.30
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.02.98
Test oil : ISO 4113
Combination No. : 0 403 466 180
Injection pump
Pump designation : PES6MW100/120RS1238
EP type number : 0 413 406 237
Governor
Governor design. : RSV425...1150MW2A407
Governor no. : 0 420 085 298
Cust. part No. : 3284067

Customer spec. information
Customer : CDC
Motor : 6 CT
Power KW : 129.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.25

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 9.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 440

Rack travel in mm : 5.25
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 24.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance

cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 8.95
Rated speed rpm : 1225
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1300
Tolerance 1/min : ± 5

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1300
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 87.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 440
rack travel mm : 4.75
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 440
rack travel mm : 5.25
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 9.95
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 10.20
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 10.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.10
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550
rack travel mm : 10.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 123.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 115.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 440

Rack travel in mm : 5.25
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.02.98
Test oil : ISO 4113
Combination No. : 9 400 087 437
Injection pump
Pump designation : PE6P110A320RS3108Y
EP type number : 0 411 816 729

Governor
Governor design. : RQV250...1100PA589
: -3
Governor no. : 9 420 080 288

Cust. part No. :

Customer spec. information
Customer : VOLVO-TRUCK
Motor : THD 100 EC
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 139.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 250

Rack travel in mm : 5.30

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 950
guide sleeve
travel mm : 6.50
Tolerance mm : + 0.20

Rated speed rpm : 250
guide sleeve
travel mm : 1.20
Tolerance mm : + 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 4.50
Tolerance mm : + 0.40

Rated speed rpm : 700
guide sleeve
travel mm : 6.50
Tolerance mm : + 0.20

Rated speed rpm : 1100
guide sleeve
travel mm : 7.25
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1175

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 139.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance

cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 65.0
tolerance degree : + 4.0

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.10
Rated speed rpm : 1165
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1240
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 64.0
tolerance degree : + 4.0

control lever
position degree : 12.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 6.70

Testing:

Rated speed rpm : 250
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 338

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.15
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 430
rack travel mm : 1.20
Tolerance mm : \pm 0.10

Pressure hPa : 280
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 700

Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 250
Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.98
Test oil : ISO 4113

Combination No. : 0 400 466 090

Injection pump
Pump designation : PES6A75D410/3RS1326
EP type number : 0 410 476 977

Governor
Governor design. : RSV325...1400A8C495L
Governor no. : 0 420 232 302

Cust. part No. :

Customer-spec. information

Customer : KHD
Motor : F6L912

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.0

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

G15

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.95
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 10.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Speed

Tolerance
cm³/1000 strokes : 2.0

Check tolerance cm ³ /1000S.	:	3.5
--	---	-----

Rated speed rpm	:	325
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Rack travel in mm	:	8.50
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Tolerance mm	:	+ 0.10
--------------	---	--------

Del. quantity cm ³ /1000 strokes	:	11.0
--	---	------

Tolerance cm ³ /1000 strokes	:	+ 3.0
--	---	-------

Check tolerance cm ³ /1000S.	:	+ 4.5
--	---	-------

Speed	:	
-------	---	--

Tolerance cm ³ /1000 strokes	:	2.0
--	---	-----

Check tolerance cm ³ /1000S.	:	3.0
--	---	-----

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	:	- 3
Rated speed rpm	:	800

Rack travel in mm	:	0.65
Tolerance mm	:	+ 0.35

governor spring pre-tension click setting x	:	5.75
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FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	1400
Aneroid pressure hPa	:	-

Del. quantity cm ³ /1000 strokes	:	44.0
--	---	------

Tolerance cm ³ /1000 strokes	:	+ 0.5
--	---	-------

Check tolerance cm ³ /1000S.	:	+ 2.0
--	---	-------

Speed	:	
-------	---	--

Tolerance cm ³ /1000 strokes	:	2.0
--	---	-----

Check tolerance cm ³ /1000S.	:	3.5
--	---	-----

CONTROL LEVER

control lever position degree	:	118.0
tolerance degree	:	+ 4.0

RATED SPEED rack travel mm	:	9.20
Rated speed rpm	:	1445
Tolerance 1/min	:	+ 5

rack travel mm	:	4.00
Rated speed rpm	:	1485
Tolerance 1/min	:	+ 15

rack travel mm	:	1.00
Tolerance mm	:	+ 0.70
Rated speed rpm	:	1675

rack travel mm	:	4.00
Rated speed rpm	:	1550
Tolerance 1/min	:	+ 15

LOW IDLE

control lever position degree	:	71.0
tolerance degree	:	+ 4.0

Setting point w/out bumper spring

Rated speed rpm	:	325
rack travel mm	:	9.00
Tolerance mm	:	+ 0.10

Rated speed rpm	:	100
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CRT mm min.	:	> 19.00
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Testing:

Rated speed rpm	:	325
rack travel mm	:	8.50
Tolerance mm	:	+ 0.10

rack travel mm	:	2.00
Rated speed rpm	:	680
Tolerance 1/min	:	+ 30

TORQUE CONTROL

Rated speed rpm	:	1400
rack travel mm	:	10.25
Tolerance mm	:	+ 0.05

Rated speed rpm : 500
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 955
rack travel mm : 10.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 10.90
Tolerance mm : \pm 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.97
Test oil : ISO 4113
Combination No. : 0 400 876 293
Injection pump
Pump designation : PES6A90D410RS2596
EP type number : 0 410 896 073
Governor
Governor design. : RSV350...1400A0C1141
: L
Governor no. : 0 420 232 423

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM352A
Power KW : 123.0

TEST BENCH REQUIREMENTS

Inlet Line : 1.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 74.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 74.5
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1680
rack travel mm : 4.00
Rated speed rpm : 1535
Tolerance 1/min : \pm 15

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 8.10
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 16.00

Testing:

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1260
rack travel mm : 11.95
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.35
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 340
rack travel mm : 11.70
Tolerance mm : \pm 0.10

Pressure hPa : 500
rack travel mm : 12.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

rack travel mm : 12.80
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 50.5
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.30
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.02.98
Test oil : ISO 4113
Combination No. : 0 400 876 404
Injection pump
Pump designation : PES6A95D41ORS2835
EP type number : 0 410 896 896
Governor
Governor design. : RSV650...1050A802263
: L
Governor no. : 0 420 232 583

Cust. part No. : 87 801 602

Customer spec. information
Customer : FNN-GEOTECH
Motor : 7.5 L
Power KW : 147.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 151.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 650

Rack travel in mm : 5.40
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 23.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 151.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 92.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1087
rack travel mm : 12.10

Rated speed rpm : 1117
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1225

Rated speed rpm : 1088
rack travel mm : 12.10

Rated speed rpm : 1118
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1225

Rated speed rpm : 1089
rack travel mm : 12.10

Rated speed rpm : 1119
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1225

Rated speed rpm : 1090
rack travel mm : 12.10

Rated speed rpm : 1120
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85

Tolerance mm : \pm 0.55
Rated speed rpm : 1225

Rated speed rpm : 1091
rack travel mm : 12.10

Rated speed rpm : 1121
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1225

Rated speed rpm : 1092
rack travel mm : 12.10

Rated speed rpm : 1122
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1225

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 650
rack travel mm : 5.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 700
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 14.50
Tolerance mm : \pm 0.10

G23

Rated speed rpm : 1050
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 975
rack travel mm : 13.65
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.90
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 325
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Pressure hPa : 550
rack travel mm : 13.55
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Rated speed rpm : 650

Rack travel in mm : 5.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 23.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113

Combination No. : 0 400 876 405

Injection pump
Pump designation : PES6A95D410RS2835
EP type number : 0 410 896 896

Governor
Governor design. : RSV400...1050A2C2263
 : -8L
Governor no. : 0 420 232 615

Cust. part No. : 87 801 608

Customer-spec. information

Customer : FNN-GEOTECH
Motor : 7.5 L-8640 Trak
Power KW : 131.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 110.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000s. : + 4.5

Rated speed rpm : 450

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1093
rack travel mm : 11.20

Rated speed rpm : 1168
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1300

Rated speed rpm : 1094
rack travel mm : 11.20

Rated speed rpm : 1169
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1300

Rated speed rpm : 1095
rack travel mm : 11.20

Rated speed rpm : 1170
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1300

Rated speed rpm : 1096
rack travel mm : 11.20

Rated speed rpm : 1171
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1300

Rated speed rpm : 1097
rack travel mm : 11.20

Rated speed rpm : 1172
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1300

Rated speed rpm : 1098
rack travel mm : 11.20

Rated speed rpm : 1173
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

Testing:

Rated speed rpm : 450
rack travel mm : 5.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 925
rack travel mm : 13.25
Tolerance mm : \pm 0.15

Rated speed rpm : 1050
rack travel mm : 11.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.10
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.25
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 11.55
Tolerance mm : \pm 0.20

Pressure hPa : 800
rack travel mm : 13.55
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 137.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

rack travel mm : 13.25
Tolerance mm : \pm 0.15

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 90.0

Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000s. : + 13.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.70
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000s. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98

Test oil : ISO 4113

Combination No. : 0 400 876 407

Injection pump

Pump designation : PES6A95D410RS2835

EP type number : 0 410 896 896

Governor

Governer design. : RSV650...1050A8C2263

: -3L

Governer no. : 0 420 232 586

Cust. part No. : 87 801 606

Customer-spec. information

Customer : NH

Motor : 7.5 L

Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly

: 1 688 901 101

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

H01

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.60

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.00

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 141.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 650

Rack travel in mm : 5.50

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 3.5

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 800
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 91.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1092
rack travel mm : 11.80

Rated speed rpm : 1122
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1093
rack travel mm : 11.80

Rated speed rpm : 1123
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1094
rack travel mm : 11.80

Rated speed rpm : 1124
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1250

Rated speed rpm : 1095
rack travel mm : 11.80

Rated speed rpm : 1125
Tolerance 1/min : + 5

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

Rated speed rpm : 1096
rack travel mm : 11.80

Rated speed rpm : 1126
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

Rated speed rpm : 1097
rack travel mm : 11.80

Rated speed rpm : 1127
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 650
rack travel mm : 5.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 780
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 12.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 12.80
Tolerance mm : \pm 0.10

Rated speed rpm : 960
rack travel mm : 13.60
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 14.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 325
rack travel mm : 11.15
Tolerance mm : \pm 0.20

Pressure hPa : 550
rack travel mm : 13.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 650
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 3.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113
Combination No. : 0 400 876 425
Injection pump
Pump designation : PES6A95D410RS2864
EP type number : 0 410 896 888
Governor
Governor design. : RSV400...1050A2C2263
: -7L
Governor no. : 0 420 232 606
Cust. part No. : 87 801 601

Customer-spec. information
Customer : FNN-GEOTECH
Motor : 7.5 L
Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 8 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

H05

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 800
Rack travel in mm : 14.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 8.0

Rated speed rpm : 650

Rack travel in mm : 4.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000s. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000s. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 151.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 8.0

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1078
rack travel mm : 11.70

Rated speed rpm : 1105
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

Rated speed rpm : 1079
rack travel mm : 11.70

Rated speed rpm : 1106
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

Rated speed rpm : 1080
rack travel mm : 11.70

Rated speed rpm : 1107
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

Rated speed rpm : 1081
rack travel mm : 11.70

Rated speed rpm : 1108
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

Rated speed rpm : 1082
rack travel mm : 11.70

Rated speed rpm : 1109
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

Rated speed rpm : 1083
rack travel mm : 11.70

Rated speed rpm : 1110
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 78.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 650
rack travel mm : 4.00
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 650
rack travel mm : 4.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 740
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 800
rack travel mm : 14.10
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 14.15
Tolerance mm : ± 0.10

Rated speed rpm : 1030

H07

rack travel mm : 11.90
Tolerance mm : ± 0.05

Rated speed rpm : 1030
rack travel mm : 12.70
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 13.35
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.15
Tolerance mm : ± 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.80
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 775
rack travel mm : 13.50
Tolerance mm : ± 0.05

Pressure hPa : 520
rack travel mm : 11.10
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 70.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 650

Rack travel in mm : 4.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113
Combination No. : 0 400 876 430
Injection pump
Pump designation : PES6A95D410RS2864
EP type number : 0 410 896 888
Governor
Governor design. : RSV400...1050AOC2263
: -10L
Governor no. : 0 420 232 619
Cust. part No. : 87 801 603

Customer spec. information
Customer : FNH-GEOTECH
Motor : P 396
Power KW : 142.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.0

H09

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 750
Rack travel in mm : 15.20
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.60
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 15.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spreed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 154.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : + 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1093
rack travel mm : 12.40

Rated speed rpm : 1158
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1270

Rated speed rpm : 1094
rack travel mm : 12.40

Rated speed rpm : 1159
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1270

Rated speed rpm : 1095
rack travel mm : 12.40

Rated speed rpm : 1160
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1270

Rated speed rpm : 1096
rack travel mm : 12.40

Rated speed rpm : 1161
Tolerance 1/min : + 5

rack travel mm : 4.00
rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1270

Rated speed rpm : 1097
rack travel mm : 12.40

Rated speed rpm : 1162
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1270

Rated speed rpm : 1098
rack travel mm : 12.40

Rated speed rpm : 1163
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1270

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 450
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 575
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 15.20
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 15.25
Tolerance mm : \pm 0.10

Rated speed rpm : 1050
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 14.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.25
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 750
rack travel mm : 13.70
Tolerance mm : \pm 0.05

Pressure hPa : 500
rack travel mm : 11.80
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 98.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See ~~card~~ card(s) W400/...

Edition : 23.02.98

Test oil : ISO 4113

Combination No. : 0 400 876 434

Injection pump

Pump designation : PES6A95D410RS2864

EP type number : 0 410 896 888

Governor

Governor design. : RSV400...1050A8C2263

: -11L

Governor no. : 0 420 232 635

Cust. part No. : 87 801 607

Customer spec. information

Customer : NH

Motor : P 396

Power KW : 176.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly

: 1 688 901 101

Opening pressure
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.60

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.70

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.75
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1095
rack travel mm : 11.10

Rated speed rpm : 1165
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1096
rack travel mm : 11.10

Rated speed rpm : 1166
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1097
rack travel mm : 11.10

Rated speed rpm : 1167
Tolerance 1/min : ± 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1098
rack travel mm : 11.10

Rated speed rpm : 1168
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1099
rack travel mm : 11.10

Rated speed rpm : 1169
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

Rated speed rpm : 1100
rack travel mm : 11.10

Rated speed rpm : 1170
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 5.75
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 585
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.70
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 13.75
Tolerance mm : + 0.10

Rated speed rpm : 1050
rack travel mm : 11.20
Tolerance mm : + 0.05

Rated speed rpm : 1050
rack travel mm : 12.50
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.75
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.75
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 650
rack travel mm : 12.65
Tolerance mm : + 0.05

Pressure hPa : 450
rack travel mm : 11.10
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 164.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.75
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113
Combination No. : 0 400 876 435
Injection pump
Pump designation : PES6A95D410RS2864
EP type number : 0 410 896 888

Governor
Governor design. : RSV400...1050A8C2263
 : -12L
Governor no. : 0 420 232 636

Cust. part No. : 87 801 605

Customer spec. information
Customer : NH
Motor : 7.5 L
Power KW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 13.45
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 139.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed		
Tolerance		
cm ³ /1000 strokes :	3.5	
Check tolerance		
cm ³ /1000S. :	8.0	
<hr/>		
Rated speed rpm :	650	
Rack travel in mm :	4.90	
Tolerance mm :	+ 0.10	
Del. quantity		
cm ³ /1000 strokes :	20.0	
Tolerance		
cm ³ /1000 strokes :	+ 2.0	
Check tolerance		
cm ³ /1000S. :	+ 4.5	
Speed		
Tolerance		
cm ³ /1000 strokes :	5.5	
Check tolerance		
cm ³ /1000S. :	9.0	

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever		
position degree :	- 3	
Rated speed rpm :	800	
Rack travel in mm :	0.50	
Tolerance mm :	+ 0.20	
governor spring		
pre-tension		
click setting x :	3.50	

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	800
Aneroid pressure	
hPa :	1200
Del. quantity	
cm ³ /1000 strokes :	139.5
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
Speed	

Tolerance		
cm ³ /1000 strokes :	3.5	
Check tolerance		
cm ³ /1000S. :	8.0	

CONTROL LEVER

control lever		
position degree :	94.0	
tolerance degree :	+ 4.0	

ASSEMBLY GOVERNOR SETTING

Rated speed rpm :	1058
rack travel mm :	11.40
Rated speed rpm :	1091
Tolerance 1/min :	+ 5
rack travel mm :	4.00
rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1250

Rated speed rpm :	1059
rack travel mm :	11.40

Rated speed rpm :	1092
Tolerance 1/min :	+ 5
rack travel mm :	4.00

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1250

Rated speed rpm :	1060
rack travel mm :	11.40

Rated speed rpm :	1093
Tolerance 1/min :	+ 5
rack travel mm :	4.00

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1250

Rated speed rpm :	1061
rack travel mm :	11.40

Rated speed rpm :	1094
Tolerance 1/min :	+ 5
rack travel mm :	4.00

rack travel mm :	0.85
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Tolerance mm : \pm 0.55
Rated speed rpm : 1250

Rated speed rpm : 1062
rack travel mm : 11.40

Rated speed rpm : 1095
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

Rated speed rpm : 1063
rack travel mm : 11.40

Rated speed rpm : 1096
Tolerance 1/min : \pm 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 650
rack travel mm : 4.90
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 740
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 800
rack travel mm : 13.45
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 1025
rack travel mm : 11.90
Tolerance mm : \pm 0.05

Rated speed rpm : 1025

rack travel mm : 12.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.10
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 750
rack travel mm : 12.40
Tolerance mm : \pm 0.05

Pressure hPa : 550
rack travel mm : 10.00
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 68.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 650

Rack travel in mm : 4.90

Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.02.98
Test oil : ISO 4113
Combination No. : 9 400 030 669
Injection pump
Pump designation : PES6A100D320/3RS3503
EP type number : 9 410 037 213

Governor
Governor design. : RQV400...1250AB13C1R
Governor no. : 9 420 030 158

Cust. part No. : TATA-CUMMINS

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2;

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 207.0
Tolerance bar : + 3.0

Test lines : 1 680 750 014

Outside diameter : 6.0

H21

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.10
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : + 0.10
Check
tolerance °NW : + 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.75

Tolerance mm : \pm 0.05

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1347
guide sleeve
travel mm : 8.48
Tolerance mm : \pm 0.15

Rated speed rpm : 400
guide sleeve
travel mm : 1.71
Tolerance mm : \pm 0.20

Rated speed rpm : 880
guide sleeve
travel mm : 4.97
Tolerance mm : \pm 0.25

Rated speed rpm : 499
guide sleeve
travel mm : 2.75
Tolerance mm : \pm 0.25

Rated speed rpm : 549
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.37
Tolerance mm : \pm 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 16.00
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.75
Rated speed rpm : 1300
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1425
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1485

LOW IDLE

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : $>$ 9.00

Testing:

Rated speed rpm : 400
rack travel mm : 6.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 625
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.75
Tolerance mm : \pm 0.10

Rated speed rpm : 1250
rack travel mm : 11.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 600
rack travel mm : 11.75
Tolerance mm : \pm 0.10

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 10.20
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 550
Pressure hPa : 400
rack travel mm : 11.20
Tolerance mm : \pm 0.20

Pressure hPa : 340
rack travel mm : 10.80
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : > 170
Rated speed rpm : > 300

Check
speed 1/min : < 190
Check
speed 1/min : < 340

FUEL DELIVERY CHARACTERISTICS

rack travel mm : 11.75
Tolerance mm : \pm 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.00
Tolerance mm : \pm 0.75

LOW IDLE

H23

Rack travel in mm : 6.00
Tolerance mm : \pm 0.10

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.02.98
Test oil : ISO 4113
Combination No. : 9 400 030 751
Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215
Governor
Governor design. : RSV475...1050A0C866R
Governor no. : F 002 A20 202

Cust. part No. : 393 0158

Customer spec. information
Customer : CUMMINS
Motor : 6BT
Power kW : 94.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.10
Check
tolerance *NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 90.3

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 6.75
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 18.6

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : 950

Del. quantity
cm³/1000 strokes : 90.3

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 102.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.40
Rated speed rpm : 1075
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1280

rack travel mm : 4.00
Rated speed rpm : 1200
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 84.0
tolerance degree : + 4.0

Control lever difference
Grad : 18.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 6.25
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 475
rack travel mm : 6.75
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 610
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.40
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 13.35
Tolerance mm : + 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 650
Pressure hPa : 950
rack travel mm : 13.50
Tolerance mm : + 0.20

Rated speed rpm : 650
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 650
Pressure hPa : 850
rack travel mm : 13.10
Tolerance mm : + 0.20

Pressure hPa : 800
rack travel mm : 12.90
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 950
Rated speed rpm : 800

H26

Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 88.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : + 10.0
Check tolerance
cm³/1000S. : + 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 6.75
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 18.6
Tolerance
cm³/1000 strokes : + 2.0
Check tolerance
cm³/1000S. : + 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 051

Injection pump
Pump designation : PES4A95D320/3RS2920.
EP type number : F 002 A10 012

Governor
Governor design. : RSV475...1050A0C931R
Governor no. : F 002 A20 237

Cust. part No. : 3283921

Customer-spec. information
Customer : CUMMINS
Motor : CUMMINS-4BTA-3.9
Power kW : 79.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 9.00
Tolerance : ± 0.10
Check
tolerance *NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 115.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 6.25

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spreed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 115.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 101.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 1110
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1500

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 81.0
tolerance degree : + 4.0

Control lever difference
Grad : 20.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.75
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 6.25
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 550
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 14.30
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.85
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 13.00
Tolerance mm : \pm 0.20

Pressure hPa : 400
rack travel mm : 11.70
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 129.2
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 75.9
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.4
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 6.25
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.02.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 092

Injection pump
Pump designation : PES6A95D320/3RS2928
EP type number : F 002 A10 019

Governor
Governor design. : RSV450...750A4C965R
Governor no. : F 002 A20 251

Cust. part No. : 393 3100

Customer-spec. information
Customer : CUMMINS
Motor : 6BT - 590
Power KW : 89.4

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 110.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 450

Rack travel in mm : 7.50

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 14.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 110.0

J03

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.70
Rated speed rpm : 800
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 855
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 950

rack travel mm : 4.00
Rated speed rpm : 865
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 81.0
tolerance degree : + 4.0

Control lever difference
Grad : 15.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 7.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 7.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 11.75
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 118.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 7.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 14.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.02.98
Test oil : ISO 4113
Combination No. : F 002 A02 093
Injection pump
Pump designation : PES6A95D320/3RS2928
EP type number : F 002 A10 019

Governor
Governor design. : RSV450...750A7C966R
Governor no. : F 002 A20 250

Cust. part No. : 3933102

Customer-spec. information
Customer : CUMMINS
Motor : 6BTA-590
Power KW : 116.2

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 131.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 450

Rack travel in mm : 7.30
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 8.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 131.0

J06

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 12.30
Rated speed rpm : 795
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 835
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 950

rack travel mm : 4.00
Rated speed rpm : 850
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 4.0

Control lever difference
Grad : 19.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 6.80
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 7.30
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 13.35
Tolerance mm : \pm 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 7.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 8.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 04.02.98

Test oil : ISO 4113

Combination No. : 0 402 034 702

Injection pump

Pump designation : PES4P120E120RS3379

EP type number : 0 412 024 702

Governor

Governor design. : RQV475...1250PA1380K

Governor no. : 0 421 815 560

Cust. part No. : 3933367

Customer-spec. information

Customer : CDC

Motor : 4BTA-A

Power KW : 82.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 103

Opening pressure bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 3.60

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.15

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 118.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1312
guide sleeve
travel mm : 9.56
Tolerance mm : ± 0.15

Rated speed rpm : 475
guide sleeve
travel mm : 1.75
Tolerance mm : ± 0.20

Rated speed rpm : 993
guide sleeve
travel mm : 6.53
Tolerance mm : ± 0.25

Rated speed rpm : 680
guide sleeve
travel mm : 3.84

Tolerance mm : ± 0.25

Rated speed rpm : 1660
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 350

Del. quantity
cm³/1000 strokes : 118.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.10
Rated speed rpm : 1315
Tolerance 1/min : ± 15

rack travel mm : 4.00
Rated speed rpm : 1400
Tolerance 1/min : ± 5

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Control lever difference
Grad : 44.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 400
CRT mm min. : > 6.80

Testing:

Rated speed rpm : 475
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 550

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 9.70
Tolerance mm : \pm 0.20

Rated speed rpm : 550
rack travel mm : 9.40
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 350

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 285
rack travel mm : 10.00
Tolerance mm : \pm 0.20

Pressure hPa : 200
rack travel mm : 9.40
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 325

Check
speed 1/min : > 80
Check
speed 1/min : < 350

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 350
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 110.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 9.40
Tolerance mm : \pm 0.20

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 176.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113

Combination No. : 0 402 076 803

Injection pump
Pump designation : PES6P100A320LS3317
EP type number : 0 412 006 706

Governor
Governor design. : RSV400...1200P5A645
Governor no. : 0 421 833 558

Cust. part No. : 1825466c91

Customer spec. information
Customer : NAVISTAR
Motor : DTA-466
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 149.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Rack travel in mm : 5.30

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : ± 0.20

governor spring
pre-tension

click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 149.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.40
Rated speed rpm : 1245

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1305

Tolerance 1/min : ± 5

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1400

rack travel mm : 4.00

Rated speed rpm : 1310

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400

rack travel mm : 5.30

Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1200

rack travel mm : 13.45

Tolerance mm : ± 0.05

Rated speed rpm : 800

rack travel mm : 14.15

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1000

Rated speed rpm : 800
Pressure hPa : -
rack travel mm : 9.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 800
Pressure hPa : 650
rack travel mm : 13.30
Tolerance mm : \pm 0.20

Pressure hPa : 315
rack travel mm : 10.70
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 171.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 131.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113

Combination No. : 0 402 744 806

Injection pump
Pump designation : PES4P120A320RS7431
EP type number : 0 412 724 805

Governor
Governor design. : RQV325...1500PA1333
: -1K
Governor no. : 0 421 815 555

Cust. part No. : 3393633

Customer spec. information
Customer : CDC
Motor : 48TA-A
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.90
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1500

Rack travel in mm : 15.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 7.80

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(8) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1555

guide sleeve

travel mm : 9.37

Tolerance mm : ± 0.15

Rated speed rpm : 325

guide sleeve

travel mm : 1.53

Tolerance mm : ± 0.20

Rated speed rpm : 1007

guide sleeve

travel mm : 5.72

Tolerance mm : ± 0.25

Rated speed rpm : 550

guide sleeve

travel mm : 3.40

Tolerance mm : ± 0.25

Rated speed rpm : 1940

guide sleeve

travel mm : 13.50

Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500

Aneroid pressure

hPa : 1000

Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever

position degree : 119.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.25

Rated speed rpm : 1565

Tolerance 1/min : ± 5

rack travel mm : 5.50

Rated speed rpm : 1720

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1850

LOW IDLE

control lever

position degree : 75.0

tolerance degree : ± 4.0

Control lever difference

Grad : 44.0

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 275
CRT mm min. : > 8.10

Testing:

Rated speed rpm : 325
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1500
rack travel mm : 15.25
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 14.70
Tolerance mm : \pm 0.20

Rated speed rpm : 750
rack travel mm : 13.75
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1500
Pressure hPa : -
Rated speed rpm : 750
Pressure hPa : -
rack travel mm : 11.65
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1500
Pressure hPa : 570
rack travel mm : 13.10
Tolerance mm : \pm 0.20
Pressure hPa : 500
rack travel mm : 12.70
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1000
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 193.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

rack travel mm : 13.75
Tolerance mm : \pm 0.20

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.60
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 7.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed

Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113

Combination No. : 9 400 030 747AB

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...11COA0C863R
Governor no. : 9 420 034 721

Cust. part No. : 3934149

Customer-spec. information

Customer : CDC
Motor : 4BT3.9
Power kW : 71.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.70
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 21.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 100.0

J20

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.75
Rated speed rpm : 1170
Tolerance 1/min : + 5

rack travel mm : 6.00
Rated speed rpm : 1240
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1375

rack travel mm : 6.00
Rated speed rpm : 1240
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 87.0
tolerance degree : + 4.0

Control lever difference
Grad : 25.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.20
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.70
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 1000

Rated speed rpm : 750
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 750

Pressure hPa : 600
rack travel mm : 12.70
Tolerance mm : \pm 0.20

Pressure hPa : 410
rack travel mm : 11.80
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 110.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 86.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 026

Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1250A0C904R
Governor no. : F 002 A20 220

Cust. part No. : 3930148

Customer spec. information
Customer : CDC
Motor : 4BT3.9
Power KW : 63.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 85.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 85.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 115.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.30
Rated speed rpm : 1325

Tolerance 1/min : ± 5

rack travel mm : 6.30
Rated speed rpm : 1370

Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 1695

rack travel mm : 6.30
Rated speed rpm : 1370

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 88.5
tolerance degree : ± 4.0

Control lever difference
Grad : 26.5

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.00

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.35
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.00
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 10.70
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 88.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

rack travel mm : 10.70
Tolerance mm : \pm 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113
Combination No. : F 002 A0Z 026CA
Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214

Governor
Governor design. : RSV475...1250AOC904R
Governor no. : F 002 A20 220

Cust. part No. : 3934148

Customer spec. information
Customer : CDC
Motor : 4BT3.9
Power KW : 63.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 85.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 6.0

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 20.5

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000s. : + 4.5

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 85.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 6.0

CONTROL LEVER

control lever
position degree : 115.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.30
Rated speed rpm : 1325
Tolerance 1/min : + 5

rack travel mm : 6.30
Rated speed rpm : 1370
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1695

rack travel mm : 6.30
Rated speed rpm : 1370
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 88.5
tolerance degree : + 4.0

Control Lever difference
Grad : 26.5
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.50
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.35
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.00
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 10.70
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 88.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

rack travel mm : 10.70
Tolerance mm : \pm 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113

Combination No. : F 002 A0Z 041AA

Injection pump
Pump designation : PES6A95D320/3RS2881.
EP type number : 9 410 037 215

Governor
Governor design. : RSV500...1100A0C923R
Governor no. : F 002 A20 231

Cust. part No. : 3934150

Customer-spec. information
Customer : CDC
Motor : 6BT
Power kW : 75.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.00
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 70.5
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Spreed	
Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 6.0

Rated speed rpm	: 500
Rack travel in mm	: 5.00
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 18.5
Tolerance cm ³ /1000 strokes	: ± 2.0
Check tolerance cm ³ /1000S.	: ± 4.5
Spreed	
Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
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K01

Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 70.5
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Spreed	
Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 6.0

CONTROL LEVER

control lever position degree	: 100.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 8.00
Rated speed rpm	: 1165
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1260
Tolerance 1/min	: ± 5

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1400

rack travel mm	: 4.00
Rated speed rpm	: 1270
Tolerance 1/min	: ± 15

LOW IDLE

control lever position degree	: 84.0
tolerance degree	: ± 4.0

Control lever difference Grad	: 16.0
tolerance degree	: ± 6.0

Setting point w/out bumper spring

Rated speed rpm	: 500
rack travel mm	: 4.50
Tolerance mm	: ± 0.10

Rated speed rpm	: 100
-----------------	-------

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 9.00
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 9.60
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.5

K02

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113
Combination No. : F 002 ADZ 057CA
Injection pump
Pump designation : PES4A95D320/3RS2927
EP type number : F 002 A10 017
Governor
Governor design. : RSV475...1250A0C936R
Governor no. : F 002 A20 241

Cust. part No. : 3934147

Customer-spec. information

Customer : CDC
Motor : 48NA3.9
Power kW : 59.7

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.20
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 92.0
<hr/>	
Tolerance cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: ± 3.0
<hr/>	
Speed	
<hr/>	
Tolerance cm ³ /1000 strokes	: 3.5
<hr/>	
Check tolerance cm ³ /1000S.	: 6.0
<hr/>	

Rated speed rpm	: 475
<hr/>	
Rack travel in mm	: 5.00
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 13.5
Tolerance cm ³ /1000 strokes	: ± 2.0
Check tolerance cm ³ /1000S.	: ± 4.5
Speed	
Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
<hr/>	
governor spring pre-tension click setting x	: 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
-----------------	--------

Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 92.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Speed	
Tolerance cm ³ /1000 strokes	: 3.5
Check tolerance cm ³ /1000S.	: 6.0

CONTROL LEVER

control lever position degree	: 93.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 9.20
Rated speed rpm	: 1340
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1400

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1475

rack travel mm	: 4.00
Rated speed rpm	: 1400
Tolerance 1/min	: ± 15

LOW IDLE

control lever position degree	: 70.0
tolerance degree	: ± 4.0

Control lever difference

Grad	: 23.0
tolerance degree	: ± 6.0

Setting point w/out bumper spring

Rated speed rpm	: 475
rack travel mm	: 4.50
Tolerance mm	: ± 0.10

Rated speed rpm	: 100
-----------------	-------

CRT min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.00
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.20
Tolerance mm : \pm 0.05

Rated speed rpm : 600

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113
Combination No. : F 002 A0Z 061
Injection pump
Pump designation : PES4A95D320/3RS2927.
EP type number : F 002 A10 017
Governor
Governor design. : RSV475...1100A2C941R
Governor no. : F 002 A20 242

Cust. part No. : 3930143

Customer spec. information
Customer : CDC
Motor : 4BNA3.9
Power KW : 54.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 9.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.55
Tolerance mm : ± 0.05

Rated speed rpm : 515

Rack travel in mm : 5.40
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.00

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.50
Rated speed rpm : 1155
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : + 5

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1325

rack travel mm : 4.00
Rated speed rpm : 1230
Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 81.0
tolerance degree : + 4.0

Control lever difference
Grad : 19.0
tolerance degree : + 6.0

Setting point w/out bumper spring

Rated speed rpm : 515
rack travel mm : 4.90
Tolerance mm : + 0.20

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 515
rack travel mm : 5.40
Tolerance mm : + 0.20

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.55
Tolerance mm : + 0.05

Rated speed rpm : 600
rack travel mm : 10.55
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 515
Rack travel in mm : 5.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 13.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.06.93

Test oil : ISO 4113

Combination No. : 0 401 816 714

Injection pump

Pump designation : PE6P120A700RS3192-1

EP type number : 0 411 826 803

Governor

Governor design. :

Governor no. :

Cust. part No. :

Customer spec. information

Customer : IVECO-AIFO

Motor : 8210SRI

TEST BENCH REQUIREMENTS

Inlet line : 2.4

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder assembly

: 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.05

Tolerance mm : ± 0.05

Rated speed rpm : 300

Del. quantity

cm³/1000 strokes : 21.0

Tolerance

cm³/1000 strokes : ± 3.0

Check tolerance

cm³/1000s. : ± 6.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

TORQUE CONTROL
Rated speed rpm : 900
rack travel mm : 13.05
Tolerance mm : \pm 0.05

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98
Test oil : ISO 4113
Combination No. : 0 401 876 815

Injection pump
Pump designation : PE6P110A320RS3374
EP type number : 0 411 816 800

Governor
Governor design. : RSV300...900P1A625
Governor no. : 0 421 833 554

Cust. part No. : 11032713
: -P01 v.08/96

Customer-spec. information
Customer : VCE
Motor : TD 63 KFE
Power KW : 122.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. L/h : 100
Tolerance L/h : + 20.0

Test nozzle holder
assembly : 1 688 901 101

K11

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 11.00
Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 151.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 5.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 151.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 47.0
tolerance degree : ± 4.0

control lever
position degree : 97.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.30
Rated speed rpm : 930
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 990
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1150

rack travel mm : 4.00
Rated speed rpm : 1010
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

control lever
position degree : 19.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Testing:

Rated speed rpm : 300
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 460
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 14.30
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1500
rack travel mm : 14.30
Tolerance mm : \pm 0.05

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 11.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 550
Pressure hPa : 580
rack travel mm : 2.70
Tolerance mm : \pm 0.20

Pressure hPa : 90
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000s. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 23.02.98

Test oil : ISO 4113

Combination No. : 0 402 646 680

Injection pump

Pump designation : PE6P120A320RS7447

EP type number : 0 412 626 970

Governor

Governer design. : RQ275/1150PA1361

Governer no. : 0 421 801 825

Cust. part No. : 1329586

Customer-spec. information

Customer : DAF

Motor : GS 200-RQ

Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 150

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 11.70

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.70

Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 178.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

Rated speed rpm	: 275
Rack travel in mm	: 5.05
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 24.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spread	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1205
guide sleeve travel mm	: 6.49
Tolerance mm	: ± 0.15
Rated speed rpm	: 275
guide sleeve travel mm	: 1.97
Tolerance mm	: ± 0.20
Rated speed rpm	: 1150
guide sleeve travel mm	: 6.00
Tolerance mm	: ± 0.10
Rated speed rpm	: 356

guide sleeve travel mm	: 4.47
Tolerance mm	: ± 0.10
Rated speed rpm	: 440
guide sleeve travel mm	: 6.00
Tolerance mm	: ± 0.10
Rated speed rpm	: 1360
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 600
Rack travel in mm	: 16.00
Tolerance mm	: ± 0.40

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 178.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 99.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 10.70
Rated speed rpm	: 1202
Tolerance 1/min	: ± 8
rack travel mm	: 4.00
Rated speed rpm	: 1280
Tolerance 1/min	: ± 15
rack travel mm	: 0.70
Tolerance mm	: ± 0.70
Rated speed rpm	: 1450

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : $>$ 6.40

Testing:

Rated speed rpm : 275
rack travel mm : 5.05
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 355
Tolerance 1/min : \pm 20

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.70
Tolerance mm : \pm 0.05

Rated speed rpm : 1150
rack travel mm : 11.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.70
Tolerance mm : \pm 0.05

Rated speed rpm : 600
Pressure hPa : -
rack travel mm : 6.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 600
Pressure hPa : 220
rack travel mm : 10.50

K16

Tolerance mm : \pm 0.05
Pressure hPa : 100
rack travel mm : 8.10
Tolerance mm : \pm 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 101.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 5.05
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.02.98
Test oil : ISO 4113

Combination No. : 0 402 746 603

Injection pump
Pump designation : PES6P120A320RS7359
EP type number : 0 412 726 925

Governor
Governor design. : RQ300/1050PA999-7
Governor no. : 0 421 801 799

Cust. part No. : CCEP 5153 66-224

Customer spec. information

Customer : RENAULT V.I.
Motor : MIHR062045 A41
Power KW : 188.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : -0.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 12.40
Tolerance mm : ± 0.05

BASIC SETTING

Rated speed rpm	: 600
Tolerance mm	: \pm 0.05
Del. quantity cm ³ /1000 strokes	: 195.0
Tolerance cm ³ /1000 strokes	: \pm 1.0
Check tolerance cm ³ /1000S.	: \pm 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

Rated speed rpm	: 275
Rack travel in mm	: -6.60
Tolerance mm	: \pm 0.10
Del. quantity cm ³ /1000 strokes	: 38.0
Tolerance cm ³ /1000 strokes	: \pm 2.0
Check tolerance cm ³ /1000S.	: \pm 5.0
Spread	
Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1145
guide sleeve travel mm	: 6.55
Tolerance mm	: \pm 0.15
Rated speed rpm	: 275
guide sleeve travel mm	: 1.75
Tolerance mm	: \pm 0.20
Rated speed rpm	: 1050
guide sleeve travel mm	: 6.00
Tolerance mm	: \pm 0.10

Rated speed rpm	: 594
guide sleeve travel mm	: 5.11
Tolerance mm	: \pm 0.10

Rated speed rpm	: 720
guide sleeve travel mm	: 6.00
Tolerance mm	: \pm 0.10

Rated speed rpm	: 1380
guide sleeve travel mm	: 11.50
Tolerance mm	: \pm 0.50

GUIDE SLEEVE POSITION

control lever position degree	: 109
Rated speed rpm	: 800

Rack travel in mm	: 20.00
Tolerance mm	: \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 600
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 195.0
Tolerance cm ³ /1000 strokes	: \pm 1.0
Check tolerance cm ³ /1000S.	: \pm 4.0
Spread	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 276.0
tolerance degree	: \pm 4.0

RATED SPEED	
rack travel mm	: -1.00
Rated speed rpm	: 1120
Tolerance 1/min	: \pm 15

rack travel mm	: -8.40
Rated speed rpm	: 1250

Tolerance 1/min : + 5
rack travel mm : -11.90
Tolerance mm : + 0.50
Rated speed rpm : 1375

LOW IDLE

control lever
position degree : 254.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CRT mm min. : < -4.70

Testing:

Rated speed rpm : 275
rack travel mm : -6.60
Tolerance mm : + 0.10

rack travel mm : -10.40
Rated speed rpm : 475
Tolerance 1/min : + 50

TORQUE CONTROL

Rated speed rpm : 600
Tolerance mm : + 0.05

Rated speed rpm : 1050
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -1.75
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 220

rack travel mm : -0.85
Tolerance mm : + 0.15

Pressure hPa : 160
rack travel mm : -1.25
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 195

Check
speed 1/min : > 80
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : -6.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.02.98
Test oil : ISO 4113

Combination No. : 0 402 746 649

Injection pump
Pump designation : PES6P120A320RS7359
EP type number : 0 412 726 925

Governor
Governor design. : RQ275/1050PA1217
Governor no. : 0 421 801 782

Cust. part No. : CCEP51508 66
: -225/228

Customer spec. information
Customer : RENAULT V.I.
Motor : MIDRO62045 I-B41
Power KW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 320
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

K21

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : -1.20
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 12.50

Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 192.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -6.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 31.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1137
guide sleeve
travel mm : 6.37
Tolerance mm : \pm 0.10

Rated speed rpm : 275
guide sleeve
travel mm : 1.37
Tolerance mm : \pm 0.10

Rated speed rpm : 1050

guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 391
guide sleeve
travel mm : 4.37
Tolerance mm : \pm 0.10

Rated speed rpm : 490
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1340
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 192.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 275.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1120
Tolerance 1/min : \pm 5

rack travel mm : -8.50
Rated speed rpm : 1235
Tolerance 1/min : + 15

rack travel mm : -12.00
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 252.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : < -5.70

Testing:

Rated speed rpm : 275
rack travel mm : -6.80
Tolerance mm : + 0.10

rack travel mm : -10.40
Rated speed rpm : 375
Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1050
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -1.90
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

K23

Pressure hPa : 320
rack travel mm : -0.70
Tolerance mm : + 0.15

Pressure hPa : 160
rack travel mm : -1.55
Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 195

Check
speed 1/min : > 80
Check
speed 1/min : < 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm3/1000 strokes : 197.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 148.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 150.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -6.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.02.98
Test oil : ISO 4113

Combination No. : 0 402 846 077

Injection pump
Pump designation : PE6P120A320RS8043
EP type number : 0 412 826 035

Governor
Governor design. : RQV300...1050PA1247
Governor no. : 0 421 814 163

Cust. part No. : 11031331-P02v.11.96

Customer-spec. information
Customer : VCE
Motor : TD 103 KCE
Power KW : 189.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 205
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 9.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 12.90
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 322.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 320

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 50.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1102
guide sleeve
travel mm : 7.80
Tolerance mm : \pm 0.15

Rated speed rpm : 320
guide sleeve
travel mm : 1.34
Tolerance mm : \pm 0.20

Rated speed rpm : 802

guide sleeve
travel mm : 5.18
Tolerance mm : \pm 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 3.11
Tolerance mm : \pm 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1250

Rack travel in mm : 10.50
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 322.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 45.0
tolerance degree : \pm 4.0

control lever
position degree : 110.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 10.80
Rated speed rpm : 1090
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

control lever
position degree : 18.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 220
CRT mm min. : $>$ 7.40

Testing:

Rated speed rpm : 320
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 380

TORQUE CONTROL

Rated speed rpm : 500
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 11.80
Tolerance mm : \pm 0.10

Rated speed rpm : 720
rack travel mm : 12.10
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.90

K27

Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 970
rack travel mm : 2.90
Tolerance mm : \pm 0.20

Pressure hPa : 230
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

rack travel mm : 12.10
Tolerance mm : \pm 0.15

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 320
Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 20.02.98

Test oil : ISO 4113

Combination No. : 0 402 846 079

Injection pump

Pump designation : PE6P120A32CRS8051

EP type number : 0 412 826 037

Governor

Governor design. : RQV300...1050PA1141

Governor no. : 0 421 814 091

Cust. part No. : 11031994 P03 v.02.98

Customer-spec. information

Customer : VCE

Motor : TD122KFE

Power KW : 297.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 145

Tolerance l/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.50

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 9.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.10
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 298.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 4.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1131

guide sleeve
travel mm : 8.63
Tolerance mm : \pm 0.15

Rated speed rpm : 325

guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.20

Rated speed rpm : 1038
guide sleeve
travel mm : 7.03
Tolerance mm : \pm 0.25

Rated speed rpm : 490
guide sleeve
travel mm : 4.65
Tolerance mm : \pm 0.25

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1170

Rack travel in mm : 12.20
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 298.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 64.0
tolerance degree : \pm 4.0

control lever
position degree : 122.0
tolerance degree : \pm 4.0

RATED SPEED
 rack travel mm : 12.10
 Rated speed rpm : 1120
 Tolerance 1/min : + 5

 rack travel mm : 4.00
 Rated speed rpm : 1200
 Tolerance 1/min : + 15

 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1280

LOW IDLE

control lever
 position degree : 64.0
 tolerance degree : + 4.0

control lever
 position degree : 12.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 225

CRT mm min. : > 6.40

Testing:

Rated speed rpm : 325
 rack travel mm : 4.00
 Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 700
 rack travel mm : 13.10
 Tolerance mm : + 0.05

Rated speed rpm : 700
 rack travel mm : 12.30
 Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500

L03

Pressure hPa : 1500
 rack travel mm : 14.00
 Tolerance mm : + 0.25

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 9.50
 Tolerance mm : + 0.15

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 840
 rack travel mm : 2.70
 Tolerance mm : + 0.20

Pressure hPa : 290
 rack travel mm : 0.25
 Tolerance mm : + 0.05

Start interlock

Rated speed rpm : > 100
 Rated speed rpm : < 230

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : -
 Rated speed rpm : 700
 Del. quantity
 cm³/1000 strokes : 269.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 10.0
 Check tolerance
 cm³/1000S. : 14.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 700
 Del. quantity
 cm³/1000 strokes : 188.0
 Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 4.00
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.02.98
Test oil : ISO 4113

Combination No. : 0 402 846 080

Injection pump
Pump designation : PE6P120A320RS8044
EP type number : 0 412 826 036

Governor
Governor design. : RGV300...1050PA1027K
Governor no. : 0 421 815 311

Cust. part No. : 11031995
: -P02 V.03/97

Customer spec. information
Customer : VCE
Motor : TD122KHE
Power KW : 209.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.35
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 11.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 3.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1105
guide sleeve
travel mm : 9.77
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 2.01

L06

Tolerance mm : \pm 0.20

Rated speed rpm : 775
guide sleeve
travel mm : 6.42
Tolerance mm : \pm 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 3.79
Tolerance mm : \pm 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1230

Rack travel in mm : 9.40
Tolerance mm : \pm 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.00

Rated speed rpm : 1085
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1180
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1270

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : $>$ 6.50

Testing:

Rated speed rpm : 300
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 12.40
Tolerance mm : \pm 0.10

Rated speed rpm : 690
rack travel mm : 11.80
Tolerance mm : \pm 0.15

Rated speed rpm : 650
rack travel mm : 12.30
Tolerance mm : \pm 0.30

L07

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1500
rack travel mm : 12.40
Tolerance mm : \pm 0.10

Rated speed rpm : 550
Pressure hPa : -
rack travel mm : 10.35
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 550
Pressure hPa : 600
rack travel mm : 1.65
Tolerance mm : \pm 0.20

Pressure hPa : 260
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 219.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 550
rack travel mm : 12.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : \pm 4.0

Check tolerance
cm³/1000S. : +- 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.35
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 3.90
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.98
Test oil : ISO 4113

Combination No. : 0 400 864 104

Injection pump
Pump designation : PES4A95D410/3RS2789.
EP type number : 0 410 894 995

Governor
Governor design. : RSV325...1250A5C877L
Governor no. : 0 420 232 632

Cust. part No. : 0423 2047 KY

Customer spec. information
Customer : KHD-DMI
Motor : BF4L 913 C
Power kW : 78.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 92.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.20

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 11.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

Spread

Tolerance

cm³/1000 strokes : 5.5

Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : FREE
Rated speed rpm : 800

Rack travel in mm : 0.50

Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 92.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 3.0

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.70

Rated speed rpm : 1295

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1355

Tolerance 1/min : ± 15

rack travel mm : 0.85

Tolerance mm : ± 0.55

Rated speed rpm : 1550

rack travel mm : 4.00

Rated speed rpm : 1400

Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 7.70

Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 325

rack travel mm : 8.20

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 570

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.70
Tolerance mm : \pm 0.05

Rated speed rpm : 500

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 6.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97
Test oil : ISO 4113
Combination No. : 0 400 874 254
Injection pump
Pump designation : PES4A95D320RS2847
EP type number : 0 410 894 990
Governor
Governor design. : RSV375...1200A5C2268
: R
Governor no. : 0 420 233 337

Cust. part No. :

Customer-spec. information
Customer : VALMET
Motor : 420 DS
Power KW : 84.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 4- 3

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Beginning of delivery difference

and maximum rack
travel : 9.00
Tolerance mm : ± 0.50
Difference ° CS : 5.00

BASIC SETTING

Del. quantity
cm³/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 6.0

Rated speed rpm : 375

Rack travel in mm : 5.20

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000s. : ± 5.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000s. : 6.0

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 11.50
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1325
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1425

rack travel mm : 4.00
Rated speed rpm : 1330
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 4.70
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 375
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 475
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 500
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
rack travel mm : 13.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 12.40
Tolerance mm : \pm 0.15

Pressure hPa : 440
rack travel mm : 12.90
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 91.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

rack travel mm : 13.00
Tolerance mm : \pm 0.10

Aneroid pressure
hPa : -

L14

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 375
Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.10.97
Test oil : ISO 4113
Combination No. : 0 400 876 421
Injection pump
Pump designation : PES6A95D32ORS2848
EP type number : 0 410 896 892
Governor
Governor design. : RSV500...1100A5C2269
: R
Governor no. : 0 420 233 338
Cust. part No. :

Customer-spec. information
Customer : VALMET
Motor : 634 DS
Power KW : 140.0

TEST BENCH REQUIREMENTS

Inlet line : 2.3
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

L15

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Beginning of delivery difference
and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference ° CS : 5.00

BASIC SETTING

Rated speed rpm : 1100
Rack travel in mm : 14.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 133.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 500

Rack travel in mm : 4.30
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 21.0

Tolerance
cm3/1000 strokes : + 3.0

Check tolerance
cm3/1000S. : + 4.5

Speed

Tolerance
cm3/1000 strokes : 5.5

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm3/1000 strokes : 133.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Speed

Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 1145
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : > 19.50

Testing:

Rated speed rpm : 500
rack travel mm : 4.30
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 530
Tolerance 1/min : + 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.05
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.60
Tolerance mm : \pm 0.10

Rated speed rpm : 975
rack travel mm : 14.30
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 14.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.10
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 550
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Pressure hPa : 655
rack travel mm : 13.90
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 137.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

rack travel mm : 14.30
Tolerance mm : \pm 0.10

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 4.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.02.98
Test oil : ISO 4113

Combination No. : 0 402 076 817

Injection pump
Pump designation : PES6P120A720RS3367
EP type number : 0 412 026 788

Governor
Governor design. : RSV525...1000P2A640
Governor no. : 0 421 833 604

Cust. part No. : RE71286

Customer spec. information
Customer : DEERE
Motor : 6081HT001
Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 14.00
Difference * CS : 2.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.20
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 179.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 525

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : 1400

Del. quantity
cm³/1000 strokes : 179.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 87.5
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.20

Rated speed rpm : 1065

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1115

Tolerance 1/min : \pm 5

rack travel mm : 0.85

Tolerance mm : \pm 0.55

Rated speed rpm : 1200

rack travel mm : 4.00

Rated speed rpm : 1120

Tolerance 1/min : \pm 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 525

rack travel mm : 4.30

Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 525
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1400

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.25
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 975
rack travel mm : 13.40
Tolerance mm : \pm 0.20

Pressure hPa : 830
rack travel mm : 12.70
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1400
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 199.5
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 525
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.98
Test oil : ISO 4113
Combination No. : 0 402 016 708
Injection pump
Pump designation : PES6P120B300RS3393
EP type number : 0 412 026 805

Governor
Governor design. :
Governor no. :

Cust. part No. : 3827028 P01 v.11.97

Customer spec. information
Customer : PENTA
Motor : TAD 740 G
Power KW : 259.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

L21

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 232.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.40
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 232.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

LOW IDLE

Testing:

Rated speed rpm : 300

rack travel mm : 4.40

Tolerance mm : ± 0.30

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 12.50

Tolerance mm : ± 0.10

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.40

Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 27.02.98
Test oil : ISO 4113

Combination No. : 0 402 046 850

Injection pump
Pump designation : PES6P120A320RS3320
EP type number : 0 412 026 763

Governor
Governor design. : RQV275...1000PA995
: -2
Governor no. : 0 421 813 940

Cust. part No. : CCEP-5134 66-211

Customer spec. information

Customer : RENAULT V.I.
Motor : MIDR 06354G M/3
Power kW : 236.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 19.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 12.50

Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -7.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1086
guide sleeve
travel mm : 8.46
Tolerance mm : \pm 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.66
Tolerance mm : \pm 0.10

Rated speed rpm : 773

guide sleeve
travel mm : 6.09
Tolerance mm : \pm 0.20

Rated speed rpm : 343
guide sleeve
travel mm : 2.33
Tolerance mm : \pm 0.20

Rated speed rpm : 393
guide sleeve
travel mm : 2.99
Tolerance mm : \pm 0.20

Rated speed rpm : 490
guide sleeve
travel mm : 3.81
Tolerance mm : \pm 0.20

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1180

Rack travel in mm : 11.40
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 240.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 306.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1075
Tolerance 1/min : \pm 5

rack travel mm : -8.50
Rated speed rpm : 1195
Tolerance 1/min : \pm 15

rack travel mm : -12.00
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 248.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -7.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm max. : $<$ -5.90
Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 600
Rated speed rpm : 1000
Tolerance mm : \pm 0.10
Rated speed rpm : 600
rack travel mm : -4.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -2.25

Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 160
rack travel mm : -1.70
Tolerance mm : \pm 0.10
Pressure hPa : 280
rack travel mm : -0.75
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195
Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
rack travel mm : -4.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : -7.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.02.98
Test oil : ISO 4113
Combination No. : 0 402 046 865
Injection pump
Pump designation : PES6P120A320LS3321
: -1
EP type number : 0 412 026 776
Governor
Governor design. : RQ275/950PA1085-1
Governor no. : 0 421 801 761

Cust. part No. : 645 625

Customer spec. information
Customer : RABA
Motor : SIEHE BEMERKUNG

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 12.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 193.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1003
guide sleeve

travel mm : 6.55
Tolerance mm : ± 0.10

Rated speed rpm : 275
guide sleeve

travel mm : 2.85
Tolerance mm : ± 0.10

Rated speed rpm : 950
guide sleeve

travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 369
guide sleeve

travel mm : 5.24

Tolerance mm : ± 0.10

Rated speed rpm : 440
guide sleeve

travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1170
guide sleeve

travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : 109

Rated speed rpm : 500

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure

hPa : 900

Del. quantity
cm³/1000 strokes : 193.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 37.0

tolerance degree : ± 4.0

control lever
position degree : 99.0

tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 13.60

Rated speed rpm : 995

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1090

Tolerance 1/min : + 15
 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1200

LOW IDLE

control lever
 position degree : 75.0
 tolerance degree : + 4.0

control lever
 position degree : 13.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
 CRT mm min. : > 8.30

Testing:

Rated speed rpm : 275
 rack travel mm : 5.70
 Tolerance mm : + 0.10

rack travel mm : 2.00
 Rated speed rpm : 355
 Tolerance 1/min : + 20

TORQUE CONTROL

Rated speed rpm : 600
 rack travel mm : 14.60
 Tolerance mm : + 0.05

Rated speed rpm : 950
 rack travel mm : 14.60
 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 900
 rack travel mm : 14.60
 Tolerance mm : + 0.05

Rated speed rpm : 500
 Pressure hPa : -

rack travel mm : 12.40
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 240
 rack travel mm : 13.10
 Tolerance mm : + 0.15

Pressure hPa : 350
 rack travel mm : 13.80
 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 900
 Rated speed rpm : 950
 Del. quantity
 cm³/1000 strokes : 185.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000s. : + 6.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 114.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000s. : + 4.0

STARTING FUEL DELIVERY

ESS test: With 24 V solenoid activated,
 rack must reach start position in max.
 control lever setting.

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 154.0
 Tolerance
 cm³/1000 strokes : + 20.0
 Check tolerance
 cm³/1000s. : + 24.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 5.70

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 24.0

Tolerance

cm³/1000 strokes : ± 3.0

Check tolerance

cm³/1000S. : ± 6.0

Speed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.02.97

Test oil : ISO 4113

Combination No. : 0 402 046 868

Injection pump

Pump designation : PES6P110A320RS3349

EP type number : 0 412 016 753

Governor

Governor design. : RQV350...1400PA1267K

Governor no. : 0 421 815 503

Cust. part No. : 16700-D8810

Customer spec. information

Customer : NMI

Motor : M 3.6 TI L

Power KW : 117.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. L/h : 100

Tolerance L/h : ± 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.55

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.50

Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 134.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Spreed	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

Rated speed rpm	: 350
Rack travel in mm	: 9.50
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 28.0
Tolerance cm ³ /1000 strokes	: ± 2.5
Check tolerance cm ³ /1000S.	: ± 5.0
Spreed	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1421
guide sleeve travel mm	: 10.03
Tolerance mm	: ± 0.15
Rated speed rpm	: 350
guide sleeve travel mm	: 1.46
Tolerance mm	: ± 0.20
Rated speed rpm	: 996
guide sleeve travel mm	: 6.78
Tolerance mm	: ± 0.25
Rated speed rpm	: 610

guide sleeve travel mm	: 3.96
Tolerance mm	: ± 0.25
Rated speed rpm	: 1730
guide sleeve travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever position degree	: - 1
Rated speed rpm	: 1545
Rack travel in mm	: 11.50
Tolerance mm	: ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1300
Aneroid pressure hPa	: -
Del. quantity cm ³ /1000 strokes	: 134.0
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Spreed	
Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever position degree	: 64.0
tolerance degree	: ± 4.0
control lever position degree	: 122.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 11.50
Rated speed rpm	: 1410
Tolerance 1/min	: ± 5
rack travel mm	: 4.00
Rated speed rpm	: 1540
Tolerance 1/min	: ± 15
rack travel mm	: 0.50

Tolerance mm : \pm 0.50
Rated speed rpm : 1640

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

control lever
position degree : 27.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : $>$ 10.50

Testing:

Rated speed rpm : 350
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.50
Tolerance mm : \pm 0.05

Rated speed rpm : 780
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 11.70
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : $<$ 200
Rated speed rpm : $>$ 250

Check
speed 1/min : $<$ 180
Check
speed 1/min : $>$ 270

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 780
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000s. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
rack travel mm : 11.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 9.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 28.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.98

Test oil : ISO 4113

Combination No. : 0 402 066 704

Injection pump

Pump designation : PES6P120A120RS3358

EP type number : 0 412 026 784

Governor

Governor design. : RSV475...1250P2A613

Governor no. : 0 421 833 501

Cust. part No. : 3927359

Customer-spec. information

Customer : CDC

Motor : 6BTA-590 ELITE

Power KW : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Test nozzle holder assembly

: 1 688 901 103

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.75

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.45

Tolerance mm	: + 0.05
<hr/>	
Tolerance cm ³ /1000 strokes	: + 1.0
<hr/>	
Check tolerance cm ³ /1000S.	: + 3.0
<hr/>	
Speed	
<hr/>	
Tolerance cm ³ /1000 strokes	: 4.0
<hr/>	
Check tolerance cm ³ /1000S.	: 7.5
<hr/>	

Rated speed rpm	: 475
Rack travel in mm	: 5.50
Tolerance mm	: + 0.10
Del. quantity cm ³ /1000 strokes	: 22.0
Tolerance cm ³ /1000 strokes	: + 2.0
Check tolerance cm ³ /1000S.	: + 4.5
Speed	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 9.0

(8) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
<hr/>	
Rack travel in mm	: 0.50
Tolerance mm	: + 0.20
<hr/>	
governor spring pre-tension click setting x	: 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure hPa	: 1500

M08

Tolerance cm ³ /1000 strokes	: + 1.0
Check tolerance cm ³ /1000S.	: + 3.0
Speed	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 7.5

CONTROL LEVER

control lever position degree	: 108.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 11.45
Rated speed rpm	: 1305
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1415
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1530

LOW IDLE

control lever position degree	: 84.0
tolerance degree	: + 4.0

Setting point w/out bumper spring

Rated speed rpm	: 475
rack travel mm	: 5.00
Tolerance mm	: + 0.10

Testing:

Rated speed rpm	: 475
rack travel mm	: 5.50
Tolerance mm	: + 0.10
<hr/>	
rack travel mm	: 2.00
Rated speed rpm	: 600
Tolerance 1/min	: + 30

TORQUE CONTROL

Rated speed rpm	: 1250
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rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 11.50
Tolerance mm : \pm 0.20

Pressure hPa : 575
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 16.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.03.98
Test oil : ISO 4113
Combination No. : 0 402 646 681
Injection pump
Pump designation : PE6P120A32ORS7412
EP type number : 0 412 626 953
Governor
Governor design. : RGV275...1000PA1331K
Governor no. : 0 421 815 561

Cust. part No. : 1349846/0

Customer-spec. information

Customer : DAF
Motor : XF 250
Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

M10

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05

Rack travel in mm : 11.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 250.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 5.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 13.0

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1055
guide sleeve
travel mm : 7.47
Tolerance mm : + 0.15

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : + 0.20

Rated speed rpm : 820
guide sleeve
travel mm : 5.14
Tolerance mm : + 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.34
Tolerance mm : + 0.25

Rated speed rpm : 1282
guide sleeve
travel mm : 12.00

Tolerance mm : + 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1263

Rack travel in mm : 10.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 250.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 13.0

CONTROL LEVER

control lever
position degree : 108.0
tolerance degree : + 4.0

RATED SPEED
rack travel mm : 10.50
Rated speed rpm : 1045
Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1125
Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.70
Tolerance mm : + 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 175
CPT mm min. : $>$ 7.00

Testing:

Rated speed rpm : 275
rack travel mm : 3.90
Tolerance mm : \pm 0.10

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 11.50
Tolerance mm : \pm 0.10

Rated speed rpm : 900
rack travel mm : 11.70
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 12.00
Tolerance mm : \pm 0.05

Rated speed rpm : 775
Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 775
Pressure hPa : -
rack travel mm : 8.30
Tolerance mm : \pm 0.20

Pressure hPa : 250
rack travel mm : 9.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : \pm 0.05
Del. quantity
cm³/1000 strokes : 289.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000s. : 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000s. : 15.0

LOW IDLE

Rated speed rpm : 275

Rack travel in mm : 3.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000s. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.03.98
Test oil : ISO 4113

Combination No. : 0 402 846 080

Injection pump
Pump designation : PE6P120A32ORS8044
EP type number : 0 412 826 036

Governor
Governor design. : RQV300...1050FA1027K
Governor no. : 0 421 815 311

Cust. part No. : 11031995
: -P02 V.03/97

Customer spec. information
Customer : VCE
Motor : TD122KHE
Power KW : 209.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.35
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 11.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 3.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1105
guide sleeve

travel mm : 9.77
Tolerance mm : \pm 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 2.01

Tolerance mm : \pm 0.20

Rated speed rpm : 775
guide sleeve
travel mm : 6.42
Tolerance mm : \pm 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 3.79
Tolerance mm : \pm 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1230

Rack travel in mm : 9.40
Tolerance mm : \pm 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 231.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : 11.00

Rated speed rpm : 1085
 Tolerance 1/min : + 5

 rack travel mm : 4.00
 Rated speed rpm : 1180
 Tolerance 1/min : + 15

 rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1270

LOW IDLE

control lever
 position degree : 73.0
 tolerance degree : + 4.0

control lever
 position degree : 23.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

 CRT mm min. : > 6.00

Testing:

Rated speed rpm : 300
 rack travel mm : 3.70
 Tolerance mm : + 0.10

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 800
 rack travel mm : 11.80
 Tolerance mm : + 0.05

Rated speed rpm : 1050
 rack travel mm : 12.00
 Tolerance mm : + 0.10

Rated speed rpm : 550
 rack travel mm : 12.45
 Tolerance mm : + 0.10

Rated speed rpm : 690
 rack travel mm : 11.70
 Tolerance mm : + 0.15

Rated speed rpm : 650
 rack travel mm : 12.10
 Tolerance mm : + 0.30

Rated speed rpm : 550
 rack travel mm : 12.75
 Tolerance mm : + 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
 Pressure hPa : 1500
 rack travel mm : 12.45
 Tolerance mm : + 0.10

Rated speed rpm : 550
 Pressure hPa : -
 rack travel mm : 10.35
 Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 550

Pressure hPa : 600
 rack travel mm : 1.75
 Tolerance mm : + 0.20

Pressure hPa : 260
 rack travel mm : 0.25
 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 1050
 Del. quantity
 cm³/1000 strokes : 221.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Speed
 Tolerance
 cm³/1000 strokes : 10.0
 Check tolerance
 cm³/1000S. : 14.0

Aneroid pressure
 hPa : 1500
 Rated speed rpm : 550
 rack travel mm : 12.45
 Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 285.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.35
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 3.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.02.98
Test oil : ISO 4113
Combination No. : 0 402 946 010
Injection pump
Pump designation : PES6P120A32ORS8028
EP type number : 0 412 926 021
Governor
Governor design. : RQV275...1175PA1101K
Governor no. : 0 421 815 982

Cust. part No. : CCEP 5133 A 66-193

Customer spec. information
Customer : RENAULT V.I.
Motor : MIDR 060226 M51
Power KW : 158.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

*NW after s.o.d. : -0.15
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00
and maximum rack
travel : 12.30
Difference ° CS : 2.00

CRT ZERO POSITION

Rack travel in mm : 13.70
Tolerance mm : \pm 0.05

BASIC SETTING

Rated speed rpm : 1175

Del. quantity
cm³/1000 strokes : 268.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 42.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1230
guide sleeve
travel mm : 8.95
Tolerance mm : \pm 0.10

Rated speed rpm : 275
guide sleeve
travel mm : 1.01

Tolerance mm : \pm 0.10

Rated speed rpm : 877
guide sleeve
travel mm : 6.51
Tolerance mm : \pm 0.20

Rated speed rpm : 389
guide sleeve
travel mm : 2.39
Tolerance mm : \pm 0.20

Rated speed rpm : 439
guide sleeve
travel mm : 3.01
Tolerance mm : \pm 0.20

Rated speed rpm : 550
guide sleeve
travel mm : 3.92
Tolerance mm : \pm 0.20

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1430

Rack travel in mm : 11.20
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1175
Aneroid pressure
hPa : 1600
Del. quantity
cm³/1000 strokes : 268.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 295.0
tolerance degree : \pm 4.0

RATED SPEED
rack travel mm : -1.00
Rated speed rpm : 1240
Tolerance 1/min : \pm 15

rack travel mm : -9.70
Rated speed rpm : 1430
Tolerance 1/min : \pm 5

rack travel mm : -13.20
Tolerance mm : \pm 0.55
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 245.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $<$ -6.70

Testing:

Rated speed rpm : 275
rack travel mm : -7.30
Tolerance mm : \pm 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1175

Rated speed rpm : 650
rack travel mm : -1.55
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : -2.80
Tolerance mm : \pm 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

M20

Rated speed rpm : 1175
Pressure hPa : 1600

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : -5.40
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1175

Pressure hPa : 320
rack travel mm : -4.70
Tolerance mm : \pm 0.20

Pressure hPa : 560
rack travel mm : -2.95
Tolerance mm : \pm 0.05

Start interlock

Rated speed rpm : $>$ 175
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 155
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

rack travel mm : -2.80
Tolerance mm : \pm 0.25

Aneroid-pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 148.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : -7.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 42.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.03.98
Test oil : ISO 4113

Combination No. : 0 403 466 151AA

Injection pump
Pump designation : PES6MW100/120RS1238.
EP type number : 0 413 406 237

Governor
Governor design. : RSV450...1100MW2A367
Governor no. : 0 420 085 250

Cust. part No. : 3926877

Customer spec. information

Customer : CDC
Motor : 6 CT
Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 130.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 450

Rack travel in mm : 5.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 25.5

Tolerance
cm³/1000 strokes : + 1.5

Check tolerance
cm³/1000S. : + 4.5

Spreed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3

governor spring
pre-tension
click setting x : 3.00

M23

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 130.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 94.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.10

Rated speed rpm : 1090

Tolerance 1/min : + 5

rack travel mm : 6.40

Rated speed rpm : 1175

Tolerance 1/min : + 15

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 1350

rack travel mm : 6.40

Rated speed rpm : 1175

Tolerance 1/min : + 15

LOW IDLE

control lever
position degree : 78.0

tolerance degree : + 4.0

Control lever difference

Grad : 16.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
 rack travel mm : 4.15
 Tolerance mm : \pm 0.05

Testing:

Rated speed rpm : 450
 rack travel mm : 5.15
 Tolerance mm : \pm 0.05

TORQUE CONTROL

Rated speed rpm : 1050
 rack travel mm : 11.10
 Tolerance mm : \pm 0.10

Rated speed rpm : 750
 rack travel mm : 11.35
 Tolerance mm : \pm 0.10

Rated speed rpm : 1000
 rack travel mm : 11.15
 Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 1200

Rated speed rpm : 500
 Pressure hPa : -
 rack travel mm : 10.50
 Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
 Pressure hPa : 550
 rack travel mm : 10.90
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1200
 Rated speed rpm : 750
 Del. quantity
 cm³/1000 strokes : 140.0
 Tolerance
 cm³/1000 strokes : \pm 2.0

Check tolerance
 cm³/1000S. : \pm 5.0

Speed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 9.0

rack travel mm : 11.15
 Tolerance mm : \pm 0.20

Aneroid pressure

hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 121.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.50
 Tolerance mm : \pm 1.00
 Del. quantity
 cm³/1000 strokes : 177.0
 Tolerance
 cm³/1000 strokes : \pm 10.0
 Check tolerance
 cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 450
 Rack travel in mm : 5.15
 Tolerance mm : \pm 0.05
 Del. quantity
 cm³/1000 strokes : 25.5
 Tolerance
 cm³/1000 strokes : \pm 1.5
 Check tolerance
 cm³/1000S. : \pm 4.5
 Speed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.03.98
Test oil : ISO 4113
Combination No. : F 000 409 004AB
Injection pump
Pump designation : PES6P120A720RS3256
: -2
EP type number : 9 400 087 080
Governor
Governor design. : RGV350...1300PA1311
Governor no. : F 000 420 106
Cust. part No. : 0270748502

Customer-spec. information
Customer : MBB
Motor : OM 366 LA
Power KW : 139.8

TEST BENCH REQUIREMENTS

Inlet line : 4.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 2.0
Test nozzle holder
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

M26

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 136.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 7.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1100
guide sleeve
travel mm : 6.45
Tolerance mm : + 0.25

Rated speed rpm : 1350
guide sleeve
travel mm : 8.50
Tolerance mm : + 0.10

Rated speed rpm : 350
guide sleeve
travel mm : 1.25
Tolerance mm : + 0.25

Rated speed rpm : 650
guide sleeve
travel mm : 4.15
Tolerance mm : + 0.25

Rated speed rpm : 1460
guide sleeve
travel mm : 9.55
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1360

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 136.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : + 6.0

control lever
position degree : 113.0
tolerance degree : + 6.0

RATED SPEED
rack travel mm : 9.70
Rated speed rpm : 1340
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1440
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1570

LOW IDLE

control lever
position degree : 80.0
tolerance degree : + 6.0

control lever
position degree : 23.0
tolerance degree : \pm 6.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : $>$ 10.50

Testing:

Rated speed rpm : 350
rack travel mm : 7.50
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.70
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 10.70
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 10.70
Tolerance mm : \pm 0.10

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 450
rack travel mm : 1.75
Tolerance mm : \pm 0.15

Pressure hPa : 200
rack travel mm : 0.70
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : $>$ 100

Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 115.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 7.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.03.98
Test oil : ISO 4113
Combination No. : F 000 409 007
Injection pump
Pump designation : PES6P110A720RS3389
EP type number : F 000 400 002
Governor
Governor design. : RQV300...1300PA1343K
Governor no. : F 000 420 500

Cust. part No. : 0280743002

Customer-spec. information
Customer : MBB
Motor : OM36LA-EURO II
Power KW : 150.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.3

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 21.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 122.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 5.50

Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1350
guide sleeve
travel mm : 8.50
Tolerance mm : ± 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.05
Tolerance mm : ± 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.05
Tolerance mm : ± 0.25

Rated speed rpm : 700
guide sleeve
travel mm : 4.35
Tolerance mm : ± 0.25

Rated speed rpm : 1780
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 122.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 13.30
Rated speed rpm : 1350
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1515
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1700

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 300
rack travel mm : 5.50
Tolerance mm : ± 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 14.30
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.90
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.25
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.10
Tolerance mm : \pm 0.10

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 150
rack travel mm : 0.90
Tolerance mm : \pm 0.05

Pressure hPa : 450
rack travel mm : 3.40
Tolerance mm : \pm 0.10

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 180

Check
speed 1/min : > 80
Check
speed 1/min : < 220

N04

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
rack travel mm : 13.85
Tolerance mm : \pm 0.05
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 99.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 44.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 7.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.00
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 136.5
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000s. : ± 14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.50
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000s. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000s. : 7.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.01.98
Test oil : ISO 4113
Combination No. : F 000 409 203
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C969R
Governor no. : F 000 420 702

Cust. part No. : 3353232

Customer spec. information
Customer : CUMMINS
Motor : 6 CT
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 10.00
Tolerance : ± 0.10
Check
tolerance *NW : ± 0.23

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference * CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.25
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 450

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 12.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

N07

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 118.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 90.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1150
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1225
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 67.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 450
rack travel mm : 5.10
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 600
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 12.85
Tolerance mm : \pm 0.25

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 12.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.03.98
Test oil : ISO 4113
Combination No. : F 000 409 211
Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A2C972R
Governor no. : F 000 420 705

Cust. part No. : 3352893

Customer spec. information
Customer : CUMMINS
Motor : 6 CT
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance *NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 11.00
Tolerance : + 0.10
Check
tolerance *NW : + 0.23

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : + 1.50
Difference * CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.25
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 88.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 400

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 5.5

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 88.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 89.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.20
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1185
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 400
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 400
rack travel mm : 5.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 595
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 11.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure

hPa : -
Rated speed rpm : 750
rack travel mm : 12.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 142.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 400
Rack travel in mm : 5.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.02.98
Test oil : ISO 4113
Combination No. : 0 402 034 702
Injection pump
Pump designation : PES4P120B120RS3379
EP type number : 0 412 024 702

Governor
Governor design. : RQV475...1250PA1380K
Governor no. : 0 421 815 560

Cust. part No. : 3933367

Customer spec. information
Customer : CDC
Motor : 4BTA-A
Power KW : 82.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : + 1.0

Prestroke mm : 3.60
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 118.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1312
guide sleeve

travel mm : 9.56
Tolerance mm : ± 0.15

Rated speed rpm : 475
guide sleeve

travel mm : 1.75
Tolerance mm : ± 0.20

Rated speed rpm : 993
guide sleeve

travel mm : 6.53
Tolerance mm : ± 0.25

Rated speed rpm : 680
guide sleeve

travel mm : 3.84

Tolerance mm : ± 0.25

Rated speed rpm : 1660

guide sleeve
travel mm : 13.50

Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : 350

Del. quantity
cm³/1000 strokes : 118.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 117.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.10

Rated speed rpm : 1315

Tolerance 1/min : ± 15

rack travel mm : 4.00

Rated speed rpm : 1400

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 73.0

tolerance degree : ± 4.0

Control lever difference

Grad : 44.0

tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 400
CRT mm min. : > 6.80

Testing:

Rated speed rpm : 475
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 550

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.15
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 9.75
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 9.45
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 350

Rated speed rpm : 1250
Pressure hPa : -
rack travel mm : 9.00
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : 265
rack travel mm : 9.80
Tolerance mm : \pm 0.15

Pressure hPa : 200
rack travel mm : 9.40
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 395

N14

Check
speed 1/min : > 80
Check
speed 1/min : < 405

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 350
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 110.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

rack travel mm : 9.45
Tolerance mm : \pm 0.20

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 176.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 26.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.03.98
Test oil : ISO 4113
Combination No. : 0 402 066 707AA
Injection pump
Pump designation : PES6P120A120RS3358
EP type number : 0 412 026 784
Governor
Governor design. : RSV475...1100P2A618
Governor no. : 0 421 833 513

Cust. part No. : 3934856

Customer spec. information
Customer : CDC
Motor : 6BTA ELITE
Power KW : 136.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 6.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 146.5
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Spread	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 7.5

Rated speed rpm	: 475
Rack travel in mm	: 5.40
Tolerance mm	: ± 0.10
Del. quantity cm ³ /1000 strokes	: 24.5
Tolerance cm ³ /1000 strokes	: ± 2.0
Check tolerance cm ³ /1000S.	: ± 4.5
Spread	
Tolerance cm ³ /1000 strokes	: 6.0
Check tolerance cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever position degree	: - 3
Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: ± 0.20
governor spring pre-tension click setting x	: 3.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1100
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N17

Aneroid pressure hPa	: 1200
Del. quantity cm ³ /1000 strokes	: 146.5
Tolerance cm ³ /1000 strokes	: ± 1.0
Check tolerance cm ³ /1000S.	: ± 3.0
Spread	
Tolerance cm ³ /1000 strokes	: 4.0
Check tolerance cm ³ /1000S.	: 7.5

CONTROL LEVER

control lever position degree	: 103.0
tolerance degree	: ± 4.0

RATED SPEED	
rack travel mm	: 10.30
Rated speed rpm	: 1175
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1230

rack travel mm	: 0.85
Tolerance mm	: ± 0.55
Rated speed rpm	: 1375

LOW IDLE

control lever position degree	: 81.0
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Control Lever difference	
Grad	: 22.0
tolerance degree	: ± 6.0

Setting point w/out bumper spring

Rated speed rpm	: 475
rack travel mm	: 4.90
Tolerance mm	: ± 0.05

Rated speed rpm	: 100
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CRT mm min.	: > 19.00
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Testing:

Rated speed rpm	: 475
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rack travel mm : 5.40
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 800
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Pressure hPa : 545
rack travel mm : 9.75
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 100.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 165.0

Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.02.98

Test oil : ISO 4113

Combination No. : 0 402 066 709AA

Injection pump

Pump designation : PES6P120A120RS3358

EP type number : 0 412 026 784

Governor

Governor design. : RSV475...1100POA632

Governor no. : 0 421 833 539

Cust. part No. : 3934128

Customer-spec. information

Customer : C/C

Motor : 6BTA ELITE

Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holder
assembly

: 1 688 901 103

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 2.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 6.75

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.20

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 138.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 5.40
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 24.5

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 138.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.20
Rated speed rpm : 1145
Tolerance 1/min : ± 5

rack travel mm : 5.70
Rated speed rpm : 1230
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 78.0
tolerance degree : ± 4.0

Control lever difference
Grad : 15.0
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 4.90
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : < 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.40
Tolerance mm : \pm 0.20

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.20
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.30
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 975
rack travel mm : 11.50
Tolerance mm : \pm 0.20

Pressure hPa : 545
rack travel mm : 9.85
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 100.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475
Rack travel in mm : 5.40
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.03.98
Test oil : ISO 4113

Combination No. : 0 402 734 801

Injection pump
Pump designation : PES4P120A120RS7313
EP type number : 0 412 724 801

Governor
Governor design. : RQV400...1250PA1113K
Governor no. : 0 421 815 376

Cust. part No. : 3926603

Customer-spec. information
Customer : CDC
Motor : 4BTA-A
Power KW : 97.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 5.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 173.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 420

Rack travel in mm : 6.60
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : MAX
Rated speed rpm : 1475

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 173.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 13.40
Rated speed rpm : 1310
Tolerance 1/min : ± 15

rack travel mm : 4.00
Rated speed rpm : 1490
Tolerance 1/min : ± 5

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 71.5
tolerance degree : ± 6.0

Control lever difference
Grad : 45.5
tolerance degree : ± 6.0

Setting point w/out bumper spring

Rated speed rpm : 300

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 420
rack travel mm : 6.60
Tolerance mm : ± 0.20

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.85
Tolerance mm : \pm 0.05

Rated speed rpm : 850
rack travel mm : 13.90
Tolerance mm : \pm 0.20

Rated speed rpm : 1250
rack travel mm : 14.40
Tolerance mm : \pm 0.20

**ANEROID/ALTITUDE
COMPENSATOR TEST****SETTING**

Rated speed rpm : 1150
Pressure hPa : 1200

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 10.50
Tolerance mm : \pm 0.20

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 555
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 290
rack travel mm : 11.50
Tolerance mm : \pm 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 315

Check
speed 1/min : > 80
Check
speed 1/min : < 325

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 850

Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

rack travel mm : 14.40
Tolerance mm : \pm 0.20

Aneroid pressure

hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 12.80
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 420
Rack travel in mm : 6.60
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed

Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet